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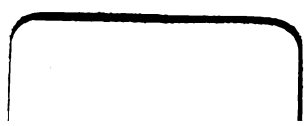


Plants of the Holy land

Henry Stafford Osborn

Collected plates

KF 2023



Christmas Gifs,
1860.





ALÔË FLOWER.

[half size]

ALÔË.

[*Aloe Socotrina.*]

OLEANDER.

[*Nerium.*]

Designs by the Author

Printed in Colors by T Sinclair, Philad^a

PLANTS
OF THE
HOLY LAND
WITH THEIR
FRUITS AND FLOWERS.

Beautifully Illustrated by Original Drawings,
COLORED FROM NATURE.

BY
REV. HENRY S. OSBORN,
AUTHOR OF
"PALESTINE, PAST AND PRESENT."

PHILADELPHIA:
J. B. LIPPINCOTT & CO.
1861.

KF 2023

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TO
REV. HALSEY DUNNING,
MY CONSTANT FRIEND,

This Work

IS DEDICATED

IN MEMORY OF THE PLEASANT DAYS WHEN IN COMPANY WE GATHERED FLOWERS
UPON THE HILLS AND PLAINS OF THE

HOLY LAND.

PREFACE.



HIS work was suggested to the author during the preparation of his larger work, entitled "PALESTINE, PAST AND PRESENT," and although flowers of Syria are noticed and illustrated therein, they are not specially associated with scriptural allusions, nor so particularly treated upon. The object of the present volume is to identify scriptural plants with the existing plants of Syria, or with those mentioned and described in the writings of early Greek and Latin physicians, botanists, and naturalists, together with such historical and botanical notices as may be of special interest.

A list has been added of some of the plants and flowers frequently found at the present time in the Holy Land.

While the author has presented in many places the results of his own historical investigations and of his personal examinations of native plants in the country itself, he has freely availed himself of all the information to be obtained from many reliable sources. Several of the illustrations are directly from natural specimens, and all are from high authorities. The author would express his obligations to CAPT. W. F. LYNCH, U.S.N., for several suggestions, and for the repeated loans of unpublished drawings and paintings,

and of a natural specimen of the "Sodom's Apple,"—the finest that he has ever seen. Also to Lieut. Lloyd, R.N., and lady, of Malta, for their kindness in aiding him to preserve many varieties.

The work is intended to comprise notices of every PLANT mentioned in the Scriptures, with its fruit and flowers. In this respect we believe the work is complete,—not one having been omitted. The addition of an equally extended and illustrated series of articles on the TREES of the Holy Land would have made this work too expensive. That must be reserved for another time.

While considerable reading has been required, and many authorities have been consulted, few have been cited in the text, the results alone, in a work of this nature, having been considered more acceptable when not encumbered with references. The following are a few of the authorities consulted and sometimes referred to:—

THEOPHRASTUS, a Greek philosopher and botanist, born B.C. 371, considered the father of botany.

DIOSCORIDES, a Greek physician and botanist, lived about the time of Nero, A.D. 60.

PLINY the Naturalist, lived about the same time.

BOCHART's Hierozoicon, with ROSENMÜLLER's notes.

HASSELQUIST, a Swedish botanist and traveller in the Holy Land.

CLUSIUS's Hieroboticon, (Sacred Botany.)

Physica Sacra, Scheuchzer, 8 vols. folio.

Scripture Herbal, Lady Maria Callcott, London, 1842,—a valuable little work, from which the author has obtained many suggestions.

H. S. O.

PHILADELPHIA, Sept. 28, 1859.

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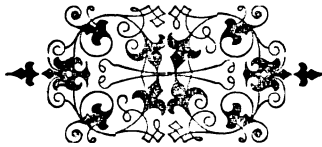
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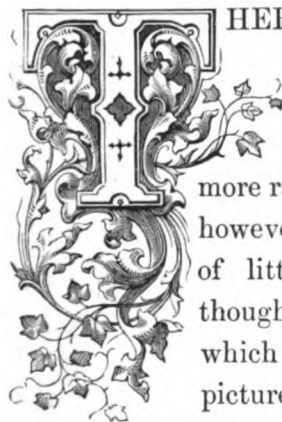


VOICES OF FLOWERS.

THE VOICES OF FLOWERS.

“Blessed be God for flowers,—
For the bright, gentle, holy thoughts that breathe
From out their odorous beauty, like a wreath
Of sunshine on life's hours.”

THE WANDERINGS OF FLOWERS—TENACITY OF LIFE—HELP TO FORM SOILS
FROM ROCKS—TRAVELLING SEEDS—THE POLLEN—MYSTERIES OF FRA-
GRANCE AND COLOR.



HERE are voices that are eloquent though they utter no sounds. There are beautiful faces that speak of innocence and love with looks which affect our hearts more rapidly through our eyes than could words however skilfully presented. And on the faces of little flowers how plainly can we read thoughts of beauty, of modesty, and of design, which the longest description would fail to picture to our minds as faithfully as does one short vision! A beautifully-carved image has neither soul nor mind; yet how eloquently it may speak of the sculptor's design and of his thoughts of beauty! Every little flower is a word in the wide-spread language of flowers, every fruit a sentence, every sprig of moss and blade

of grass a conjunction or particle, a little word, which helps to add interest to the whole; and the history of each, in its efforts for life, forms a volume in the large library of flowers and plants scattered from the equator even to the ice-bound regions of the farthest North.

Few are aware how widely spread throughout the world are the plants and flowers, and some trees, the names of which are so common, and which are mentioned even in the smallest school-book on botany. Few consider what wanderers they have been. The lily, the tulip, the walnut, the cherry, the vine, with others, seem to have started into existence in soils far east of Europe, and even of Syria.* Most of the flowers and plants which add such beauty to European and American gardens are products of the distant East, and have been found growing spontaneously only near the plains and mountains of Persia and the Caucasus. Perhaps, if we could trace back the ancestry of many beautiful plants and fruits, as we can that of families, we should be guided through ages, and over distant seas and lands, until in our search we should tread within the long-lost Eden, where was planted the first garden, and where flowers first bloomed in beauty and sent forth their fragrance and opened their bright colors to the sun in the early and sinless childhood of creation. And when our first parents made the first fruits the occasion of their shame and exile, flowers and gentle plants not included in the curse seemed in sympathy to wander out from Eden, going forth on their joyful mission to deck the "thistle and the thorn,"

* Michaux.

and to cheer and instruct many a heavy-hearted wanderer through the wilderness of earth. And busy little missionaries of light and beauty have they been. What spot of earth have they not struggled to cover with their verdure and their smiles? Along the borders of the Sahara, where restless waves of sand and the heated winds of the simoon prevent all animal life, are found broad and deep coast-lines of verdure, and flowers and plants and the graceful palm stand eagerly vying with each other to dispute every inch of soil with the howling storms of the desert; and occasionally a seed, taking advantage of the gale, leaps from its parent stem, and, riding upon the storm, is carried for miles to some little island-home in the sand, where, taking root, it soon achieves a victory, and beautiful verdure springs up to hide the former barrenness. Others have found their way into regions of perpetual ice; and Captain Richardson speaks of plants and small flowers which bloomed so near to the Polar regions that gloomy piles of ice lay on the ground as their companions during the entire year. Some, with a remarkable fitness to all the peculiarities of the countries whither they wander, have been found in Iceland, running their delicate roots into the hot waters of the boiling springs, and thence drawing nourishment which permits them to continue from year to year putting forth blossoms and bearing seed in continuance of a life so welcome and so singular. Farther south, and near to Naples, is the Grotto del Cane,* out of which issues a pestiferous breath

* Called thus—the “cave of the dog”—because of the fact that a dog on entering sank down helpless, and thus led to the discovery of the deadly air which settles near the ground.

that permits no life, not even of an insect. Yet I have seen little leaves and mosses and tiny blossoms as if they condescended to cast a veil of beauty over the dark rocks of that dismal cave, because they could live where all else died. Sulphurous fumes of the lake not far from this cave penetrate the mud on its margin, and bubble up in a gas which has rapidly tarnished the silver coin I have placed on the shore near its waters; and yet even there, amid those volcanic vapors, as on the island of Ischia not far off, can be seen mosses and ferns beautiful and graceful, bending before those breezes which, as they pass over them, gently shake out from their bright petals the poisonous air they endure that they may line with life and verdure the shore which suggested to the Greek poets the idea of the infernal lake. Now let us pass to the east, up the rugged heights of Vesuvius, and over the crumbling crags of lava, which have left a wild desolation triumphing over the soil, and covering the land for miles with the ragged mantle of volcanic fury. Even here we shall find that some little modest plant has preceded us, and, springing from a winged seed wafted up in the wind or carried on the dress of some traveller, has dared to plant its roots and spread out its mottled covering as a moss or lichen, or to erect its peaceful standard upon some rock, and, drinking in the moisture of the passing clouds, has set up for itself in that desolate region. And there it will grow, and, when its joyous mission is over, will droop and die; and after its death, in obedience to a wonderful chemical law, its little microscopic roots (or basis, if a lichen) will send forth an acid which shall eat into the desolate rock until it

shall form both cells and soil, that the future plant may crown that rock with a deeper and stronger verdure than before. Thus will they work, until in time that cragged mass of lava shall yield before its quiet conquerors, and, crumbling into dust, become the fit soil for the growth of trees and forests. Thus in many regions the sun and showers alone combine with plants to reduce large rocks to soil.

Where there is life at all on the earth, it seems first to have been vegetable life. Little plants, like pioneers, have gone forth to prepare the way, and animal life has followed.

But if we will follow all vegetation, we must prepare to leave the surface of the land and wander far beneath that surface, into the depths of caves and fissures and mines. Clothing even the stalactites of caverns I have found vegetation, which under the microscope exhibited all the beautiful branching forms and roots of plants which grow beneath the light of day. And then they crowd into life between the rocks and rubbish of mines, apparently satisfied to live where no ray of light has ever penetrated.

There is yet another region, whose vegetation is as varied and mysterious in its life and beauty as that which holds its empire on the land. This region is that of the waters, where vegetation assumes a form and character modified by the nature of the new world in which it appears; but in its necessities, its tenacity of life, its beauty of form and color, and its wandering travels, it is still the same. Some sea-plants are so similar to those of the land that in branch and color we immediately see a mutual likeness. Others take upon them the

forms of sea-mosses, sponges, and lichens, and depart so widely from the nature of plants that we leave them to be noticed in other scientific works than those on botany.

How have plants travelled from one region to another, especially where their delicate forms have preceded man, and been found growing on mountain-tops never before trodden by human steps? There is a natural tendency in flower-bearing plants to diffuse themselves over the earth; but this is effected chiefly by means of the seeds, aided by the dust of flowers, called the *pollen*. The history of the pollen is as full of mystery and wonder as is the movement of a distant planet or satellite. Every flower contains this dust, without which the plant will fail to produce a healthful seed or fruit. In some the pollen can be gathered upon the finger when introduced into the open flower. In others it is so minute as to be invisible. A greater contrast exists between the seeds, which range from five pounds, as in the cocoanut, to the dust-like form of some varieties of the mushroom and the so called puff-ball. When the latter bursts, the seeds escape in a small cloud and are carried on the lightest breeze for many miles. Other plants and lichens of the lowest order send forth particles of seed-dust so small as to be invisible to the naked eye, which, floating on the air, enter the smallest crack, and have settled even in the lungs of birds and men and there made for themselves a strange soil, to commence a growth which has either been destroyed by some effort of nature or has injured the texture of the lungs itself. A grain of fine dust-seed has been known to lodge in the joints of the wasp in the

West Indies, and, finding room for its tiny roots, has there spread forth its branches, and thus been carried from place to place on the back of the insect. Some larger seeds, unable to travel through the air without aid, are provided with various forms of wings and fringes, and, thus prepared, have been caught up by the wind and have travelled many miles uninjured. Linnæus supposes that a plant (*Erigeron Canadense*) which suddenly appeared in England, never before known except in Canada, grew from a seed which had crossed the Atlantic through the air. And seeds have sprung up on the southern coast of Spain which had ripened on the northern shores of Africa.

While some flowers produce the pollen which is necessary to its own fruitfulness, others will bear no fruit unless the pollen from others fall upon the pistils of their own flowers. In that little floating particle of pollen-dust resides the mysterious power to produce a seed which shall spring up, and bear leaves, and branches, and flowers, and fruit, which often show the very diseases of the parent tree. Under the microscope each minute particle of dust which forms the pollen of a lily appears precisely like all the other pollen of the same flower; and this form will always be the same for every lily. In one flower the dust is like a ball, having on its surface eight equidistant points, as in the hollyhock; and that form will always be found the same in that flower. In others, as in the fuchsia (lady's ear-drop) and violet, its form is that of an egg with varying compartments. In others, again, the form is triangular, or elongated, or pointed; but in each flower the pollen presents a change

in form which becomes characteristic of that flower whose petals it has left. With all this variety, none has yet discovered wherein exists that mysterious power which that little tiny particle of dust possesses of communicating unchanged through so many changes the features of its parent plant. First, this little dust must attach itself to the pistil of a neighboring flower. Caught on the stigma, it is carried down the pistil-stem to the germ. There it has already undergone a change, and has become absorbed in the material of the future seed, at the base of the flower. Soon the seed will be perfectly formed and dried, and the dead petals, falling off from the calyx, will leave that seed at liberty. Then, caught up by the gale or carried away by the birds, it will presently fall upon some distant soil and undergo decay, and from that decaying seed will shoot forth an embryo plant, a little stem, gently unfolding to the sun and rain its tiny leaves and branches. In a few months it too will bear its flowers and its seed, and upon that seed will be found perhaps a colored mark strangely different from that of the seed which fell into the ground some time since. It is a new variety, colored with a shade and formed into a shape unknown to the parent plant which bore the former seed. Would you know whence came that little streak of color? It was that of a seed in a distant field, the minute dust of whose pollen, like a little planet full of mysterious power, floated from that open blossom until, meeting in its aerial journey the open petals of another plant, it quietly settled upon its little delicate fibres, and, in course of the changes described above, caused the new features we have mentioned.

Thus, the farmer has often been surprised to see a field which has for years yielded nothing but yellow grain suddenly bear, from the *same seed*, grains of a differently-colored corn; and, when the surrounding fields have been visited, the cause has been discovered in some distant growth, which distributed upon the breeze those little dust-like worlds of life, the pollen. These settled upon the silken tassels of the yellow corn and streaked the grain with colors peculiar to that distant field of blossoms whence the pollen had floated on the air. It is wonderful that the form of the future branches of the oak should in some way be hidden in the little acorn; but it is far more mysterious that the pollen which passes from one blossom to another should contain the atoms of matter which will determine the color and shape even of the little acorn itself upon the future oak. What microscope of the philosopher shall discover, within that particle of pollen, the embryo form of the future leaf, or fruit, or seed, which it contains, and which shall be developed upon its magic touch? Now, it must be remembered that, however excellent the seed may be, the pollen is necessary that other seed shall be produced from it. However imperceptible to the eye, yet this dust passes from flower to flower, from anther to stigma, according to a never-failing law. A beautiful palm-tree blossomed in a garden in Paris, but bore no fruit, because no other palm-flowers grew near it to send forth the mysterious pollen to settle among its petals. But suddenly it shows the signs of fruitfulness. The petals fall off, and the healthful fruit appears. There can be no doubt of the fact; and bota-

nists begin to wonder. Is it possible that another palm-tree grows in Paris? Notices are published, and advertisements inserted in the papers, inquiring for another palm; and lo! in a distant court-yard, unknown and alone, another palm-tree is found in blossom, and its pollen, floating over that great city, had settled upon the tender points of the palm-flower in the garden and produced the fruit. What a delicate attraction must have guided that little dust, as it floated away from the stamens of the one flower, through the dust and smoke of the city, to settle upon the small point of the stigma of the other, and how exquisite the sympathy which existed between them!

There are other little globes of matter, not so mysterious as the former, and much smaller. They are of a different nature, and their existence affords us occasions of great pleasure. They are so minute that no naked eye can see them, nor can the microscope reveal them; and yet there is little doubt—nay, there is a certainty—of their existence. I refer to the causes of the fragrance of flowers. If the yellow rind of a fresh orange is squeezed near the flame of a candle, sudden flashes of light dart into the flame. If these little jets are carefully caught on clean glass, they leave perfectly circular spots. They were globular when in the air, and were little balls of essential oil, which were forced out from the cells of the orange-peel. Now, what violence has performed in a coarse degree upon that rind, the infinitely gentler fingers of nature do to all fragrant flowers. Millions of invisible balls of delightful odors float away from every blossom and shrub that can in any degree be

said to be fragrant. The delicate fraxinella will dart out little flashes of light when held near a flame, as if angry at the proximity of so terrible an enemy. After that its fragrance ceases, because you have broken up and emptied the little bottles of sweet odors that nature opened so softly and carefully to the air. From every flower which exhales a sweet breath, a fragrant oil can be distilled, with more or less difficulty according to the character and delicacy of the fragrance. Associated with the little atoms of which we have just spoken is a mystery, and a truth more surprising than the mystery. For what object in the great world of design and beauty were these little oily globules made? Is the answer simply this?—"That they might impart to our senses the joy of their rich and varied perfumes." Then, if this solves the mystery, there is left a wonderful truth. If the object was nothing more than to charm us with the perfumes which plants and flowers exhale the world over, then these little floating atom-worlds of fragrance tell us of a Creator's love as eloquently as do the shining planets that roll on in their grand courses around the same sun that bathes these little atoms with its light. Did these little balls spring away from sweet flowers under the impression that they too were pollen-dust and were designed to some end, or had some immortality to spend? Then, as the dying naturalist Buffon exclaimed in view of a blessed immortality, "if a deception, 'tis a glorious one." And not entirely a deception; for they live: these little atoms live, in their effects upon the hearts and thoughts of millions who enjoy the flower-world and every morning bless God that in creation he had some ends

that terminated so plainly in the hearts and joys of his creatures.

For what use, also, were colors formed? Why were not all flowers of one shade? Why was nature so extravagantly profuse in scattering her richest colors over hill, and dale, and mountain, and valley, and bestowing on every humble useless flower and blossom tints that Titian or Raphael—nay, even an angel artist—could not excel? Green and blue are wisely distributed, the blue above and the green below, to temper the sun's rays and reflections, so that the delicate eyesight might rejoice in light without pain. But wherefore dip the pencil and brush into seventy colors and shades, and scatter designs of exquisite beauty so thickly over earth's flowers?

"The Almighty Maker has throughout
Distinguish'd each from each, by strokes
And touches of his hand with so much art
Diversified that two were never found
Twins at all points."

Will not fruit ripen without color, and seeds become perfect in its absence? Experiments show that the colors of flowers may be effectually destroyed when first they appear and yet the seeds be as perfect and the fruit as pleasant as where no colors have been wanting. Then there is an object as well as a design and contrivance; there is a final as well as a first cause; and every flower of earth becomes a little altar, whence matins and vespers of incense ascend to Him who sent them forth from Eden less as exiles than as missionaries to proclaim his loving-kindness to every land on earth. This is their office

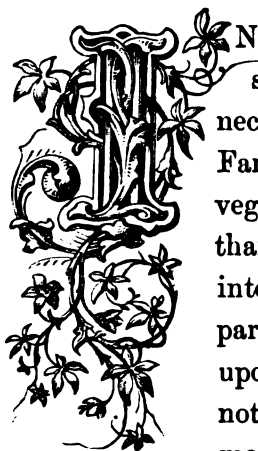
and their message, and in gladness have they fulfilled and declared it; for earth owes its fragrant beauty to the offerings of flowers; and its fruits, and the food which nourishes the millions of beings in the air and upon the land, have all sprung from flowers,—as if the fruits of creation should first be sanctified by the incense of floral innocence before committed to our hands. Is it not true that God

“ Might have made enough,—enough
For every want of ours,—
For medicine, luxury, and for toil,—
And yet have made no flowers” ?



FLOWERS OF THE HOLY LAND.

APPLICATION OF PREVIOUS REMARKS.



IN our remarks upon flowers we have chosen such botanical interests as are closely connected with the flowers of the Holy Land. Far greater beauties and mysteries in the vegetable and particularly the floral world, than any hitherto noticed, might be brought into an interesting light; but there are some particular marks of design and beauty impressed upon the plants of the Orient which we shall notice. In addition to what we have said, it may be remarked that the plants and flowers of any soil are unerring little witnesses to its former character. Fruits and flowers are records of former fertility and of the nature of former soils. If you present a handful of soil to an agricultural chemist, after careful analysis he will, without any knowledge of the country whence it was taken, tell you the character of the plants that could not grow in it, as well as the names of some that could. But, notwithstanding the superior wisdom of the modern chemist, plants are far more wonderful chemists, and surpass in their analytical power all

that can be achieved by human skill. There is some relationship between a phosphorus match and a bunch of wheat in the ear. So intimate and so important is this relationship that wheat will not flourish where the soil contains no phosphorus. (Phosphorus is then under a form different from that in the match, but as truly in the soil as in the match.) But so small is the quantity, and so wonderfully diffused, that for a long time skilful chemists were not able, even with delicate tests, to extract it from the soil. Yet every grain of wheat and every fragile stem of straw contains it, and so unmistakably that all chemists were forced to acknowledge that certain plants, in their power to gather it from the earth around, had far surpassed them. There is also some relation between a cornstalk and a bright little crystal of quartz. Nature knows how to dissolve the material of that little crystal and scatter it through the soil in the form of what is called silica; and, if it were not there, the best seeds of corn would produce no crops, and the best cultivation of that soil would be but toil and time wasted. So, then, plants and fruits will tell us what the soil contains as truly as the most skilful chemists. We sometimes wonder why a land which once bore in profusion certain fruits and plants now seems so unfriendly, and that plants which once grew in it luxuriantly have exchanged places with others, or perhaps have disappeared entirely. But, could these little plants speak, they would immediately tell why it is that so small a quantity of phosphorus or silica in the soil was necessary to their existence. Our eyes form but a small part of our bodies; but their loss would occasion injury to the rest of the body,—perhaps

death; and a country where we must lose our sight would soon be deserted. The silica in a wheat-straw forms but a trifling part of its whole; yet if the soil be deprived of that small part the wheat refuses to grow, though every other ingredient be present and ready to furnish the plant to the utmost of its demands. Now, why is the plant so delicate in its choice? and why does it require this trifling amount? Because, as in the loss of the human eye the whole body is affected, so the loss of that ingredient is followed by certain injury to the most important parts of the grain itself. For that silica, the dissolved crystal, forms the strength of those slender columns—the straws—on which the grain is sustained; and, without sufficient support for the heavy weight, it must fall when the first wind blows upon the ripening grain. Now, is it not economy to refuse to scatter growths whose fruits before they are ripe must fall and rot upon the earth? This would be the consequence if that little portion of silica were wanting; and for this reason the plant refuses to grow. These traits of life are interesting in themselves; but they have as much to do with Scripture as with botany. The flowers and fruits of the Holy Land, and particularly those referred to in the sacred writings, declare with unerring force this truth,—that the soils of the East have undergone a change, and that plants now grow in those lands of which the ancients knew nothing, and flowers and fruits once flourished there which have long since ceased to have a place or name. Some have doubted whether the Scriptures were properly understood in those places where some fruits not now in existence are referred to. Others

have asserted that those who wrote the Holy Word as God directed them were mistaken, and that the Scriptures are false. And though such objections to the Scriptures failed to prostrate the faith of Christians, many were unable to account for certain facts well sustained by an examination of the soils. Take the following as an illustration. Some years since, some skeptics discovered what they supposed to be the proof of an error in the books of Moses. The record there plainly speaks of the chief butler and the wine and grapes in Egypt. (Gen. xl.) But history and facts were against the statement. The Greek historian Herodotus, who wrote of Egypt more than four hundred years before the time of our Saviour, declares that no vines grew in Egypt; and the opinions of others added authority to that historian's statement. The soil was examined and found to be wanting in the ingredients necessary to sustain the grape; and the conclusion was that here was an error in Scripture. For two thousand years the testimony of Moses stood alone in its contradiction to the testimony of historians and the voice of the soil. But a Frenchman, (M. Costaz,) during a visit to the catacombs and caverns of an ancient city on the Nile, discovered sculptures revealing the fact that, at a time long before the birth of the Greek historian, there lived men who planted vineyards and made wine in Egypt, and had carved in the rock the history of the whole process; and, as the curiosity of antiquaries was stimulated, other places were opened, and a certain sediment was found in ancient jars; and chemists knew this sediment to be the remains of ancient wines. The first discoveries

were made at the present little Arab village of El Kâb, the ancient Elethya, on the right bank of the Nile.* But what shall we say of those examinations of the soil that led to the decision against the growth of the vine in ancient Egypt? They were doubtless correct. But, while they had reference only to the present state of the land, they merely proved that many centuries ago the soil of Egypt had undergone a change, and that the plants which once grew there had taken their departure, or had perished, long before the time of Herodotus. Now leave Egypt, and travel eastward and northward into Palestine, and similar evidences appear. A celebrated traveller (Robinson) discovered near Gaza an old stone wine-press. The presses were there, but the vines, as in Egypt, were gone; and the soil is of such a nature as to forbid the assertion that any vineyard for many centuries before could have flourished in that region.

Let us wander over this land of the Israelites. Some of its flowers and fruits have passed away, and others have taken their places. New flowers and new fruits grow on Mount Olivet, in Gethsemane, in Jerusalem, and throughout the country. Many plants common in some parts of the East in the time of our Saviour were evidently brought there from other lands. It is evident that even as far back as the time of Solomon, trees were transplanted and gardens adorned with plants and flowers which did not naturally belong to the soil. (Eccles. ii. 5.) And, judging from the elevated character of his reign, we might suppose that the king who was so well

* Description de l'Égypte pendant l'Expedition de l'Armée française.

acquainted with the trees and plants of Syria (1 Kings iv. 33) would introduce into Palestine choice foreign plants to ornament the gardens of which he speaks. Josephus tells us "that the balsam for which Judea was so famous came from the 'Queen of Sheba, who presented a root of it to Solomon." (Antiq. lib. viii. c. 6.) Cambyses introduced the peach into Egypt, (Maillet's Letters, ix. p. 17;) and it is thought to be beyond dispute that the cassia, the orange and lemon varieties, the apricot, the moseh, (a delicious fruit, but which cannot be kept,) the pomegranate, the cous or cream-tree, are none of them natives of the country. (Pococke's Description of the East, v. 1-205.) Now look again upon the fields of the Holy Land, and another truth appears in addition to that which we have mentioned. The fruits and plants which are the same in name and kind as those of the times of the Scriptures are not the same in excellence. They are but the shadows of what they were. Changes have swept over the country which have affected the soils perhaps in some of those small but important parts of which we have spoken; and thus, while the manner of cultivation is unquestionably different from and inferior to that of former days, there are changes not attributable to cultivation alone. We have, in our wanderings over the hills of Palestine, gathered the cotton, the wheat, and the corn; we have examined the varieties of the grape, the seeds of which have been carried to other lands and planted. When we first plucked the cotton upon the hills of Samaria, its diminutive size forbade the idea that the seed would ever permit a favorable comparison between its pod and that of the cotton

of the South. And yet, under careful examination, its fibre was found to be equal, if not superior, and seeds transplanted to a healthful soil, under proper management, have yielded pods of triple size.*

Slender and feeble stalks of grain, that droop on the plains and hills near Esdraelon or the plain of Jezrael, will spring into vigorous life and bear fourfold when taken to other places; and seeds from ordinary crops, which we found in the horse-trough of some poor Arabs, brought forth sumptuously when transplanted to our own gardens in America. Grapevine-plants from the mountains of Lebanon, which in their native hills bore bunches weighing but two to three pounds, the season after their removal to proper soils were covered with bunches the weights of which were seven to eight pounds.

Closely allied to these are other facts. The mysterious life that dwells within a seed sometimes remains within it through many ages, until all other life that existed when that seed was born has departed. I have in my possession some seeds of corn which are the produce of a few grains taken from a catacomb in Egypt. These grains were buried more than three thousand years ago, and yet when planted in the usual method proved that life was not extinct, but was simply sleeping in its silent tomb through those long ages till it was waked from its stupor by energetic influences in the earth into which the grain was put. During that time the very nature of the soil of Egypt had undergone a change, and those little seeds had outlived the ingredients of that soil in which three thousand years ago they had

* See "Palestine, Past and Present," p. 305.

been planted. The seeds, therefore, possess a permanency of character unknown even in the soil, and in each healthful grain there is a little volume of unchangeable matter, a little book of the history of vegetation, which was written three thousand years ago, and every part of which is as perfect as when it dropped from the stalk. It tells us that the soil of the country has changed, and not the seed, and that when the parent stalk was growing the soil was in the highest state of fertility. It speaks not only of the past, but, when compared with the other seed-volumes which are now found in the land, tells us that once there were vineyards, and fields of corn and wheat, which grew from the ancestors of these present families of plants, far exceeding in size and in beauty the degenerated offspring. We need nothing more than experiments upon the present grains and seeds of the land to show that there was once, many centuries past, a nobler race of plants, from which these seeds have descended.

Let us inquire into the cause of this change. An answer to this question shall include some notice of ancient gardens; but there is another answer, which cannot be founded upon any knowledge of the surface. Mr. Lyell, the geologist, has noted changes in the elevation of the land which are now in progress, affecting a large portion of the country north of Palestine. The same changes are evident north of Tyre, as shown in a recent work;* and, strange as it may seem to some, the whole land of Palestine is but the covering

* Palestine, Past and Present, p. 187.

of volcanic forces existing in mysterious depths far beneath the hills and mountains. The lofty ranges of Lebanon were once covered with the waters of the sea; for we have seen the fossil shells and fish of long-past ages, taken from near the highest summits; and there are plains near the sea-coast which, judging from recent shells discovered in their sands, were once probably several feet beneath the sea, but are now as many feet above. Other facts teach us that this subterranean energy has doubtless had a gradual but powerful influence upon the agricultural character of the whole land. But there are suggestions derived from the location of ancient gardens. There was a time when the hills of Palestine furnished the most perfect picture of rural beauty that—out of Eden—this world ever saw. The hills bear evidence of a very extensive former cultivation upon terraces; and these galleries of gardens, encircling the hills and mountains, must have presented a variety which could never be attained upon the level fields. Most of the hill-sides were once used as gardens, the larger growths of trees being permitted only in the valleys or plains, or possibly, as we find in some rare cases, on the very tops of the hills. The terrace-walls would not have resisted the wide-spreading roots of large trees nor have sustained the pressure. Hence the largest trees are found, at the present day, more frequently growing at the foot of hills than on their sides. What beauty must have reigned throughout that land of terraced hills soon after the accession of Solomon to the throne! Viewed from any elevated spot, it presented to the eye of the traveller innumerable heights gracefully moulded, begirt with bands of floral beauty and

covered with a vegetation of exceeding verdure and fruitfulness, if we may rely upon the histories written of the land by residents about the times of our Saviour. Cultivated gardens of flowers and fruits and foliage upon the hills, rising like islets of beautiful light from the verdure of the forests and fields below, caught the first beams of the sun in the morning, and reflected his clear rays from millions of points wet with the heavy dews of the Orient, which on evaporating diffused fragrance from a thousand garden-mantled hilltops. Such were the visions which the Holy Land afforded before the Captivity. All history, and the intimations of prophecy, and the ruins and remains, teach us to regard this as anciently a land of unusual beauty, which nothing now but imagination can truthfully represent. The terraces, which were made from the rocks of the country and required frequent repairs, commenced to fall into ruins soon after the Captivity; and after the ruin of the terraces the violent rains soon washed down into the valleys the rich soils which had so long been kept upon the hill-sides; and now those are the most barren spots which once were the richest. But the saddest thought of all is that the absence of the forests and of the wide-spread verdure of gardens and plains may prevent the return of the heavy dews of ancient times, and of the rains which existed when the vegetation of former days invited those seasonable showers which are now withheld from the whole country. These three causes—namely, geological changes, want of proper culture, and consequent alteration of climate—have greatly modified the fruits and flowers, the plants and trees, of the Holy Land; and whilst we gather the beautiful

remains of former times, we may know why we are unable to describe all the flowers that once grew in this pleasant land, the names of which and the descriptions we have, but whose forms have long since passed away. Once there were many flowers and fruits peculiar to the Holy Land; and we read of some transported and preserved with care because here they found their native soil;* but, like the ancient people of God, the former owners of the land, they have been scattered among the nations of earth. A few have remained in the land, growing side by side with others which, having sprung up in late years, were unknown when Solomon planted his "gardens and orchards," and even when our Lord compared with Solomon the flowers on the fields around him.

Notwithstanding all these changes, there are many flowers remaining, full of beauty and of eloquence. Some of these still linger in the land as the long-abiding representatives of those whose names are written in the Holy Word. Prophets and kings and historians of early ages called these by name and admired them. They looked upon them as we can now, and in their bright and innocent forms saw images of beauty, and made them tributary to their thoughts of reverence, of joy, and of majesty. We too would meditate upon them. Perchance they will speak to us the thoughts that in centuries past they uttered to hosts who have long since entered the paradise above. To these classic specimens we have given precedence, and in alphabetic order. There is another class, claiming attention from their beauty and from the tenacity with which they

* Maillet, Letters.

cling to the soil. These, though they have not the scriptural prestige of the former class, have an interest of their own, and their quiet language claims a passing thought; and we cherish them for what they bring us either of joy or sadness, if it adds to what we already know of the soil from which they sprung.





PLANTS OF THE HOLY LAND.


ALOES.

(*Aloë*.)

LILIACEÆ.

Aloë Socotrina.

Numb. xxiv. 6; Ps. xlv. 8; Prov. vii. 17; Cant. iv. 14; John xix. 39.

F the several varieties of the aloë, the plant which we have represented is the nearest in form to that of the aloë of Scripture. The scenery in the background is that of the plain of Moab, with the mountains of Aba-rim in the distance, as we look toward the west. This is the region with which it was first associated in Scripture. It seldom exceeds five feet in height, and hence can scarcely be called a tree, but is more properly a plant. The trunk is rough and indented; the leaves are thick and well filled with the sap, and sometimes from two to three feet long, and are edged throughout their length with little, thorn-like teeth. From these leaves exudes a thick juice, which, when evaporated until it is solid, forms the aloes of the druggist. From the midst of these sword-formed leaves rises a spike, at the end of which is the cluster of beautifully-colored flowers. This spike has caused the plant to be called in some of its varieties the "spiked aloes," or *aloë spicata*. Each little tube-like flower is parted at its end into five leaves, or rounded points, forming a coronal termination, in the centre of which are the six delicate filaments of the stamens irregularly protruding just

over the end of the flower. The form, the color and position are accurately given in the representation.

Though the aloë is referred to five times in Scripture, it is one of those rare plants introduced into the Holy Land from Arabia, or, more properly, from the island of Socotra, or some adjoining country where alone it is found to be indigenous. Hence the name *Aloë Socotrina*. The taste which Solomon exhibited for flowers, and the fact that soon after his accession to the throne he displayed so extensive an acquaintance with the botany of Palestine and Syria, make it probable that before he was king he added to the varieties of flowers in the land and encouraged their introduction by others.

The aloë was a favorite plant with Solomon, and is spoken of by him in a manner which leads us to suppose that he thought it a choice plant. "Myrrh and aloes" he classes with "the chief spices." (Cant. iv. 14.) Myrrh was from a rare tree in Arabia, as were other gums mentioned in the same connection. During the days of Solomon, the rarest plants and in the greatest number were cherished in Palestine. He planted "orchards and gardens," and gathered trees of all kinds of fruits. Eccles. ii. 5.

At the present time, this variety of aloë is universally acknowledged to be the most beautiful and fragrant, and furnishes the purest and richest gum of the world. The island of its origin is directly east of the Strait of Babel-mandel, and about three hundred miles from the southern coast of Arabia, on the direct course from the Red Sea to India; and the existence of the plant or the gum in Palestine may well

suggest the thought that the ships of Solomon wandered over tracts of sea now hardly suspected of having been known in the commerce of the ancients. Seamen passing the island can see at a distance the spontaneous growth of the aloë, covering miles of the western shores, with the beauty of their scarlet and yellow flowers tipped with green and in brilliant contrast to the deep green and glossy surface of the leaves. The extract of the plant is mentioned as early as the time of our Lord, and probably was known long before. It appears to have been in use in the East and in India from a very early period. The references in Scripture allude to its beauty and fragrance and its use in embalming. It will be noticed how tent-like is the form of the foliage, from which rises the spike or spear-like rod crowned at the top with the flower-clusters. When Balaam stood on the heights of the long chain of mountains east of the Dead Sea and beheld the tents of Israel, his exclamation was appropriate not only in view of the beauty, but of the form. Balaam, whose residence was in Midian, about thirty miles east of the Dead Sea, had often seen the aloë, which was nearer its native soil in his own land and in Arabia than in Palestine. But his words are significant of the beauty or rarity of the plant, while its similarity to the tents of Israel is expressed:—“*How goodly are thy tents, O Jacob, and thy tabernacles, O Israel! As the valleys are they spread forth, as gardens by the river-side, as the trees of lign-aloes which the Lord hath planted, and as cedar-trees beside the waters.*” (Numb. xxiv. 5–6.) First is figuratively expressed the *great extent*, then the *general appearance* of beauty, “as gardens,” and lastly the *particular*

forms, "as the trees of lign-aloes." Perhaps many of the tents had their colored ensigns floating in the breeze at their sides. It was customary in ancient times to run the spear into the ground by the side of the tent, and to suspend on the top some little fragments of cloth or other material. This is at present the custom of the Bedouins in the desert, who frequently carry tufts of feathers or wool at their spear-heads. The similarity of the aloë-plants in form, with their rich dress of green and their flowers at the top of their spikes, would very appropriately be suggested at the sight of the numerous tents of Israel. Indeed, no plant could have been selected which would have furnished a more beautiful and suitable figure than this; and the phrase "which *the Lord* hath planted" is a method of expressing the exceeding excellence of the object thus described, as in the case of Nimrod, who was spoken of as a mighty hunter "*before the Lord.*" Gen. x. 9.

Other allusions in Scripture are made to its fragrance, which may refer both to that of the plant and of the gum. An eminent writer* on plants, who was a physician and lived in the times soon after the death of our Lord and during the reign of Nero, speaks of the gum as well known, and describes that variety as the best which is obtained from the beautiful plant we have described; and, moreover, it seems to have been known long before in India: hence, as in the gums of frankincense and of myrrh, the extract of the aloë might have been used in the times of Solomon. When freshly gathered,

* Dioscorides: so Pliny's Nat. Hist.

its fragrance is peculiarly pleasant, and unlike that of any other Oriental spice or plant. It must be remembered that aloes was numbered among the healing gums and was early used for that purpose; and the aloë-tree was therefore considered healthful even in its fragrance. Hence the beauty of the allusion in Ps. xlv. 8, where Christ is referred to, and his garments spoken of as exhaling the perfume of aloes. Not only pleasantness and peace are found in him, but healing for the past and restoration to life and immortality.

The remaining allusion is to the use of aloes in embalming. Nicodemus brought about one hundred pounds of myrrh mixed with aloes, to be used in wrapping the body of our Saviour before entombment, which was the course generally pursued among the Jews, not so much with the expectation of preserving the body as to render it fragrant and to express affection for the deceased. The amount brought by Nicodemus was significant of his great reverence for the Saviour, as from various circumstances it was much greater than was customary to use on such occasions; especially as the embalming of our Saviour's time was not like that of the Egyptians. The associations, therefore, of the aloë are its beauty, its fragrance, and its preservative power. Having been a foreign plant, it has almost, if not entirely, disappeared from the Holy Land. Captain Mangles saw the aloë growing in Petra in Edom during the month of May, and describes it as having in some instances "upward of one hundred blossoms in a bunch;" but north of this it does not seem to flourish.





MINT.

[*Mentha Viridis*]

CUMMIN.

[*Cuminum Sanctivum*]

ANETHUM.

[*Anise of Scripture*.]

Hills around Nazareth

Designs by the Author.

Pr in Colors by T Sinclair, Philad^a

ANETHUM.

(*Anise of Scripture. Common Dill.*)

UMBELLIFERÆ.

Matt. xxiii. 23.

Anethum graveolens.

WE must explain the use of this name before commencing to speak of the plant it represents. The word in Matt. xxiii. 23, translated ANISE, signifies “to run up,” and in its spelling is *anethon* rather than anise. It refers to a species of herb known as the *Anethum* in the time of our Saviour, and even before that time,—as appears probable from the similarity of the word to that used by Virgil, who speaks of its fragrance thus:—

Et florem jungit bene olentis anethi.

“And adds the flower of the fragrant dill.”

The plant is therefore not properly anise, which, though of the same order, is a different variety.

The usual height of the *anethum* is about two feet, having leaves similar to the parsley, and bearing bunches of small flowers, not particularly pleasing, called umbels; whence the name of the order. It was probably an unimportant article, and occasionally used in the Jewish method of embalming among the poorer classes. Its insignificance made the remark of our Saviour more forcible:—“Woe unto you, scribes and

Pharisees, hypocrites, for ye pay tithe of mint, and anise, and cummin, and have omitted the weightier matters of the law, judgment, mercy, and faith: these ought ye to have done, and not to leave the other undone."

Some have supposed that the anise of Matt. xxiii. 23 was the same as the present anise, and not the anethum. But the latter still grows near Nazareth in the month of July, which shows that there is no reason for changing the meaning of the original word to "anise," especially as there is a distinctive word for anise and as the Greek seldom uses the same word for two varieties of the same plant.

The scriptural allusion to this plant has reference to its unimportance, which might be inferred from the fact that it is spoken of but once. It illustrates the minuteness of the Jewish forms, which required the offering of the tenth part of even so insignificant a plant.

In the group of those plants represented in the second plate that on the right is the Anethum.



Ex. ix. 31; Numb. v. 15; Deut. viii. 8; Ruth i. 22, ii. 23, iii. 2, 15, 17.

So general has been the cultivation of barley that almost all traces of its native country have been lost. The same remark will apply to several of the most useful grains; and it is worthy of notice that the seeds or grains best suited to support the human family are of such a nature as to adapt themselves to the largest surface of soil and the greatest variety of temperature. Rice, maize or Indian corn, and wheat, are the most widely spread; and barley, with oats, extends very far north in Europe, the former being cultivated as high up as 70° north latitude.

In Syria the cultivation of barley has given rise to many apparent contradictions among travellers, as well as variation in their notices of the times of sowing and gathering. Some have remarked that in September and October the natives are engaged in planting; others have postponed the planting-season to February, and even March. These variations are easily accounted for by the fact that barley is sown in that country in some places in the fall, and the natives, interrupted by the rains, postpone planting the remaining seed until the opening of spring. It has often been noticed that in the same week the barley in one field—for example, near Gaza—was

just in leaf when in another—perhaps in Egypt—it was ripe; and not only so, but within sight of the same hill some crops are ripe while others are quite green and unfit to cut. Generally the crops near Jerusalem are ready for the harvest about the latter part of March, and farther north, toward Tyre, not till April; whereas about Beirût and Damascus the farmer must wait till the middle and close of April. The Arabs, however, plant barley at various times out of the barley-season; and therefore it has been seen ripe as late as July: in such cases it has to be watered by hand. It is now cultivated for horses and for making bread, but for the latter purpose it was more generally used in ancient times than at present.

The Israelites doubtless first learned the use of barley in Egypt, where it was so long known as to be considered originally the gift of Osiris, their god, to whom its discovery was attributed. Herodotus says* that the Egyptians drank a “liquor fermented from barley,” which seems to have been a kind of wine rather than beer; and even in modern times a traveller (Pococke) speaks of a beer made of this grain which was drunk among the poorer Arabs whom he visited, but its intoxicating qualities were due to something with which it was mixed. Among the Caffres barley furnishes an intoxicating drink from simple fermentation, though unmixed. As the Israelites must have been acquainted with this drink, which appears to have been much stronger than the wines of the East, it probably formed the “strong drink” referred to in the

* Euterpe, 77.

Scriptures, which is distinguished from the wine of the country in several passages. Lev. x. 9; Numb. vi. 3.

Barley appears in some slightly different varieties; but the kind known to the ancients is an Oriental variety now considered the best. In the Scriptures, allusion is made to its uses for food and in the offerings, and also to its time of growth as a method of distinguishing the seasons of the year.

From the first class of references, it seems to have formed a great part of the bread of the people, and was generally confined to the poorer sort, as not quite so rare as wheat, in connection with which it seems to be mentioned very frequently.

In the sacrifices, barley was offered in case of jealousy on the part of the husband, and it was to be unaccompanied by any spices or oil, as was customary in other offerings. More than four hundred years before the Christian era, the nations of the northernmost parts of Europe sent offerings to Delos; and Herodotus tells us that these offerings were conveyed from town to town wrapped in barley-straw. This author also relates that the same singularity is practised among the Thracian and Pæonian women, who in their sacrifices to Diana, the goddess of the chaste, make use of barley-straw.* In this there seems to be a similarity to the practice of the early Hebrews, and one is led to suppose that in some way the custom among the Thracians was derived from the Israelites.

The third class of references have respect to the season of the year. As we have seen, the times of the present crops vary with the distance north or south of Jerusalem. We shall be

* Melpomene, xxxiii.

nearest the proper times if we remember that the barley-seed generally requires from ten to twelve weeks to ripen from the period when the seed is first put into the soil, provided the weather during that time is favorable to its growth. The barley is ready for harvest, in the latitude a few miles south of Jerusalem, about the 20th of March, varying a few days sometimes in the plains near the coast or in the warmer vales to the east. North of Jerusalem and around Samaria it is a week or ten days later, and about Mount Lebanon still later by another week. On the east of Lebanon and in the plains of Damascus it seems to be several days in advance of the crops on the sea-side slopes and plains of the mountain-ranges, because of the soil and the sun which encourage the eastern growths. The wheat-season is still later in all parts than that of the barley. Hence, when Ruth began her gleanings in the fields of Boaz, it is evident that, being in the region of Bethlehem, her visit to the land of her mother-in-law must have been near the last week of March. On the other hand, as the entrance of Holofernes into the land with his army was in the season of wheat-harvest, it must have been at a time much later, determined by the ripening of the wheat. As the first mention of barley in the Scriptures is in connection with the destruction of the grain by the plague of thunder and hailstones, we are enabled to ascertain the date of that plague, for it is stated that "the barley was in the ear;" hence it must have occurred somewhat earlier than the middle of March: for the Israelites were at that time at Rameses, in latitude about seventy miles south of Gaza. As barley ripens in the latter place about the 18th, the difference of the season

could not have been more than a week or ten days at the utmost, and the barley, being "in the ear," would soon have ripened; so that some of the plagues occurred in the first week of March.

The last mention of barley is in the narrative of the feeding the multitude upon the hill-sides near the Lake of Galilee. In this humble but miraculous feast a lesson of deep importance is associated with the use of the barley loaves and fishes. It suggests the humble origin of the peasant from whose hands those few loaves came; and, moreover, it speaks of the state of mind of the thousands who waited on the Saviour. Of the vast number there assembled it is highly improbable that all were aware of the miraculous fact that these few loaves were rapidly and silently growing in the hands of the apostles. It was to the crowd but common barley bread. And yet we hear of no complaints. All ate and seemed to be thankful for the plain fare to which they were invited. From this, it is evident that either they were all of the poorer sort and accustomed to this common diet, or else it speaks of the wonderful interest which must have attended the Saviour's visits, that those who were of the better classes should have been so interested in his appearance, his words and his acts, as to submit to fatigue and eat of the lowly feast alike with all the rest. This however is the characteristic of a faithful Christianity. It places all on the same platform when embracing the truths and hopes of the gospel, and leads us often to see a miracle of power and love resulting from the presentation of the most common and the simplest truths.

BAY.

(*Sweet Bay.*)

LAURINEÆ.

Laurus Nobilis.

(*Oleander.*)

Nerium.

THE green bay attains the height of a small tree or large shrub, with healthy-looking, dark-green leaves. It is not generally met with throughout the land, but flourishes in some places where the soil is rich, especially in the old gardens of Tyre and Sidon. Notwithstanding the supposition that the above is perhaps the "green bay-tree" referred to in the 37th Psalm and 35th verse, yet a "green tree that groweth in its native soil," or, simply, a "flourishing plant," might be the signification of the word translated "green bay-tree" in that verse; and the celebrated botanist Hasselquist noticed, as every one who has travelled through Judea has also, that the oleander or nerium, called the rose-bay, flourishes throughout the land and especially by the water-courses. Hasselquist was the first to suppose that the oleander was the plant referred to as the green bay-tree, springing up in crowds along the damp banks or overhanging the rivulets. It mingles with the tamarisk and willow upon the sides of the Jordan and the shores of Lake Tiberias, and gives life and beauty to many a rugged rock on the Mediterranean.

It is supposed that the "bay-tree," or oleander, is alluded to

three times in Scripture, although not under the same name, either in the original or in our version. In Ps. i. 3 it is spoken of simply as "a tree:"—"He shall be like a tree planted by the rivers of waters." In Dan. iv. 4 it is said of Nebuchadnezzar that he was "flourishing in my palace,"—where the word, though correctly translated "flourishing," might also have been "green bay-tree," and the passage would have been, "he was a green bay-tree in my palace," as some think this signification is equally applicable to the word occurring in Dan. iv. 4 as to that in Ps. xxxvii. 35.

There is room for doubt as to the particular kind of tree referred to, but the Scripture allusion is evidently to the flourishing character, the greenness and beauty, of the plant. The botanical term "*nobilis*," associated with the generic word *laurus*, expresses even now the idea that associated itself with the bay-tree anciently. It was a noble plant, with beautiful, rich green leaves, and the perfect emblem of prosperity in every respect. Hence the aptness of the illustration, "I have seen the wicked in great power, spreading himself like a green bay-tree; yet he passed away." Neither the oleander nor the bay-tree (*Laurus nobilis*) are strong trees; and very frequently a slight cause will either break the limbs or tree, or cause it to fade immediately, even during its most prosperous season. The oleander represented in the first plate is supposed to be the plant referred to in the passages quoted above. It grows freely throughout the country and by the brooks, but is not so leafy as when cultivated in gardens.

BEAN.

(*Pulse. Common broad bean.*)

LEGUMINOSÆ.

Vicia Faba

THE bean is a native of the Holy Land and of Asia Minor. Though abhorred among the Egyptians, it was cultivated in Greece and carried thence into Italy; and, as the Romans fed their horses on beans, it was introduced through their armies into Europe. Anciently, bread was made of beans, especially among the Italians, but was considered indigestible, probably from the manner of either preparing or baking it, as the poorer classes only used it, or those who were so situated as to be unable to bake it with care amid the haste and dirt of the camp. They were used on funeral occasions as food and offering, and also offered to the deities of agriculture, —though the priest never partook of the bean, nor did the higher class of Egyptians. It is supposed that Pythagoras partook of the prejudices of the Egyptian priests against beans, as he had been instructed in their ceremonies. His countrymen used them largely, while he abstained from them entirely.

Though the word “beans” occurs only in 2 Sam. xvii. 28 and in Ezek. iv. 9, yet, under the name of “pulse,” the same food is referred to several times. It is first mentioned in the description of the supplies which the true friends of David brought him when, flying from Absalom, he spent a short time on the

east of Jordan. In the other passage it is mentioned in association with the usual articles of food; and therefore it is reasonable to suppose that it was an article of ordinary diet not generally used among those who could afford something better. It is worthy of note that the mention of the word "bean" or "pulse," which words signify the same food, occurs only in connection with scenes of trial and sadness. This food is associated with the exile of David, the distress of the prophet which should indicate the sorrow and ignominy of the people of God, and the bitter affliction of the children of Israel who accompanied Daniel. So that, while the article is spoken of as food, it has always been in connection with the suffering or degradation of God's people.



BRAMBLE.

(*Blackberry.*)

ROSACEÆ.

Rubus fruticosus.

HASSELQUIST found the variety above mentioned among ruins in the Holy Land; and it grows freely among the rocks of Petra. We frequently met with it pushing out of falling walls and along the roadside. It may be native in Judea,—though it is found wild in many countries, preserving very much the same characteristics both in size and fruit which attend it in all its wanderings over the world.

The first notice of it is in the parable by Jotham the son of Gideon,—probably the first parable ever uttered,—when all the princes save Jotham had been slain in treachery. Ascending a height which overlooked the conspirators and from which he could be heard, he recited to them the beautiful allegory that “the trees went forth on a time to anoint a king over them;” and, after various applications, finally they addressed the bramble:—“Come thou and reign over us.” And the bramble said unto the trees, “If in truth ye anoint me king over you, then come and put your trust in my shadow; and if not, let fire come out of the bramble and devour the cedars of Lebanon.” The whole is a wise and impressive illustration of what might be expected from the bramble-king. The plant yields a fruit; but, though surrounded with thorns, it is easily crushed,

and therefore not able to defend itself, except from those who would peaceably enjoy its fruit. Hence the appropriateness of the representation which Jotham made to the people of their future king in the fable of the bramble and the trees.

It flourishes amid the ruins of Idumea,—sadly fulfilling the prophecy of Isaiah:—"Thorns shall come up in her palaces, nettles and brambles in the fortresses thereof, and it shall be an habitation for dragons and a court for owls." The same sentiment is expressed by the Persian poet:—"The spider spreads the veil in the palace of the Cæsars, and the owl stands sentinel on the watch-tower of Afrasiab." There is a tradition that a bramble-bush lately shown near Mount Sinai was the identical bush in which Moses beheld the marvellous sight of an unconsuming fire. It should be remembered that the word translated "bush" in the passage spoken of is the same as that elsewhere rendered "bramble;" which furnished some ground for the tradition.

The last mention of the bramble in Scripture gives force to the moral which our Saviour conveyed in the following words:—"Every tree is known by its fruits; for of thorns men do not gather figs, nor of a bramble-bush gather they grapes." The contrast is remarkably fine. The clustering grapes are in miniature represented in the clustering seed-fruits of the bramble. Each fruit is formed of a number of little balls gathered together in each berry upon the vine-like bushes of the bramble. At a short distance there is some similarity in size and growth, and even in the form of the leaves, but great diversity in the value of the fruit. The fruit decides the cha-

racter of the tree. One is valuable and in large clusters, the other minute and of little worth. It should be remembered that the vineyards of the East are seldom or never formed in high or large arbors, but that the vines are small, being pruned down to a certain height and sustained by short sticks set in rows.

The general impression derived from the allusions of Scripture is that the plant grew freely without culture and was not very welcome for its flowers or fruit : hence its profusion was a sign of a neglected country.



BRIER.

(*Sweet-Brier.*)

ROSACEÆ.

Rosa camina.

THIS variety of the rose seems to be a native of Palestine. Perhaps it wandered from the more distant East many centuries past and first found there a congenial soil. It is susceptible of a cultivation which alters the character of the flower in some respects, producing a larger and more beautiful corolla than it possesses when found wild. Several beautiful varieties in the gardens of England were originally the sweet-brier.

The word occurs eleven times in the Hebrew Scriptures, but is not always rendered "brier" in the English version, for it also signifies "scorpion;" and the scorpion and brier have some points in common. An ancient method of punishment for crimes was by rods of thorns or briers, which tore the flesh while inflicting the stroke and smart of the ordinary smooth rod. Hence reference may have been made to this mode when Rehoboam (1 Kings xii. 11) very unadvisedly threatened the people, saying, "My father has chastised you with whips, but I will chastise you with scorpions,"—that is, with rods or whips made of briers. These words are repeated in the same chapter and in the tenth of Second Chronicles. This was also the method pursued by Gideon when he "taught" the

men of Succoth with the thorns of the wilderness and with briers.

Though the single pink rose known to us as the sweet-brier is rather pleasant as a wild flower, it leaves upon the stem a red berry, wholly unfit for food; is quite ephemeral, and not very fragrant; and the roots run through the ground, often intruding upon plants of greater value. At the same time, its thorns are unusually thick and sharp. Hence it has never been a favorite, and seems to have been always spoken of with contempt in the Scriptures, or as used for the punishment to which we have already alluded.



BULRUSH.

CYPERACEÆ.

Typha latifolia.

GELSIUS supposes that the word translated "bulrush" in the Scriptures signifies papyrus or paper-reed, and that the "paper-reed" of Isaiah xix. 7 is in the original a term for reeds generally. His supposition is sustained by a host of authorities and circumstances. Hasselquist, the Oriental botanist, describes two varieties of reed growing near the Nile. "One of them has scarcely any branches, but numerous leaves, which are narrow, smooth, channelled on the upper surface, and the plant is about eleven feet high. The Egyptians make ropes of the leaves. They make floats of this reed, which they use when they fish with nets. The other sort is of great consequence. It is a small reed, about two or three feet high, full-branched, with short, sharp, lancet-shaped leaves. The roots, which are as thick as the stem, creep and mat themselves together to a considerable distance. The plant seems useless in ordinary life; but to it is the very soil of Egypt owing; for the matted roots have stopped the earth which floated in the water, and formed out of the sea a country that is habitable."

It is very probable that the little ark made for the infant Moses by his mother was constructed of the reeds of this or a similar plant, tied together by the long leaves which each stem

affords,—or perhaps by the peelings of the paper-reed near at hand, and of which we shall speak hereafter. And yet, according to the scriptural account, it required the application of the asphaltum of the country, or perhaps some well-known slime, to prevent the entrance of the water. A little floating ark could easily be fitted up from these materials, which, on the placid waters of the Nile, would float a long time uninjured and keep its little charge as safe and free from water as the most loving mother could have wished. The ancient Egyptians used the fibre of the plant for cordage; and the probabilities are that the bulrush referred to in Exodus ii. 3 was larger than at present, and that, with a skill peculiarly Egyptian, it was used even in the construction of small ships. Some, however, have with great plausibility thought that plant to be the paper-reed, to which this word here translated “bulrush” refers, and which we have spoken of under the head of Paper-Reed.

The Scripture references to the bulrush only indicate incidental facts. In Isaiah xviii. 2 the reference speaks of the plant as characteristic of that nation “beyond the rivers of Ethiopia,” and as used for the construction of their vessels,—probably only those intended for rivers. The bulrushes eleven feet in height, which Hasselquist describes, could easily have been so joined together as to form vessels of considerable size and strength; and probably of such vessels the prophet speaks, as used in his day and in the country referred to.

CALAMUS.

(*Sweet Calamus—Sweet Cane.*)

GRAMINEÆ.

Andropogon. Calamus aromaticus.

ONE plant bears the various titles found in Scripture which we have given above. It seems originally to have been brought from India; as the Venetians, who used the variety in their treacle, which became celebrated for its excellence, never concealed the name of the land whence it was obtained. The merchants repeated the report that it was found about Mount Lebanon; but of this there was no proof, as the fragrant rush found there, called camels' hay, bears little resemblance in character to the calamus, which came from a distant country and was considered equal with the best spices of the Scripture. It was very valuable: hence the reference of the prophet:—"Thou hast bought me no sweet cane *with money*; neither hast thou filled me with the fat of thy sacrifices." The camels' hay or fragrant rush spoken of is thus described by Hasselquist:—"It is a *schoenanthus*, grows in the deserts of both the Arabias: it is gathered near Limbo, a port in Arabia Petræa, and exported to Egypt. The Venetians buy it in Egypt, as it enters into the composition of Venice treacle. This was undoubtedly one of the aromatic sweet plants which the Queen of Sheba gave to Solomon, being to

this day much esteemed by the Arabians for its 'sweet smell.' They call it *Nelsi Meccani* and *Iddhur Mecchi*."

The andropogon, however, answers all the characteristics of the sweet cane or calamus of Scripture. It is fragrant, furnishes an oil suited to the various purposes of the service of the tabernacle, and is brought from a distance. There are, however, several reeds or canes which are fragrant; and the effort to determine the scriptural calamus, or fragrant cane, has caused much discussion and examination; but it is not certain that the description of the true plant has yet been given.

Each of the four references to this calamus or cane in the Scriptures seems to suggest its rarity. Its first mention is in connection with the holy ointment of which it formed an important ingredient; and from Isaiah xliii. 24 it seems that it was not only necessary to purchase the calamus, but that it was expensive. Hence the want of it in the sanctuary-service was suggestive of the covetousness of the people in their offerings; and it was one of the complaints urged by the prophet against Israel, "Thou hast bought me no sweet cane with money;" the significancy being that, having lost interest in their personal sacrifices, they had no further regard to the sanctity and holiness of their priests. The ointment so necessary to their acceptance in the ceremonial worship had lost its value with the people. It was either omitted, or no longer prepared with the care and expense of previous times. The references in Scripture, therefore, are to its fragrance and its use in the preparation of the most holy ointment in the temple-service.

CAMPHIRE.

DIPTERACEÆ.

Laurus camphora. Linn.

Dryobalanops camphora of Colebrook.

LYTHRARIÆ.

Lausonia inermis, (Henna.)

THE word "camphire" is but another form of the word "camphor" of the present times. But a very general impression prevails among those who have paid attention to the botany of Scripture, that the Hebrew word translated "camphire" refers to the fragrant and beautiful plant called "henna," of which the Hebrew name is *capher*. Before the departure of the Israelites from Egypt, henna seems to have been used as a dye; for mummies have been found with their nails colored with the juice extracted from its leaves. The plant is only a few feet in height, grows abundantly in Egypt and many other parts of the East, and bears clusters of blossoms and delicate flowers which are exceedingly pleasant in their fragrance; and the ladies often gather the branches to decorate their persons, especially by working them into their hair. The leaves are dried, and, when broken up and formed into a paste, are applied to parts of the hands, feet, and face, so as to color the flesh and nails in accordance with Oriental ideas of beauty. I once obtained permission of a little Egyptian girl to scrape her finger-nails, which had been thus colored, and found that the dye had penetrated beneath the surface, so that a con-

siderable portion of the nail was removed before the natural color appeared. But its use is perhaps not altogether the result of caprice; for some writers speak of a quality in the extract which has the effect of restraining perspiration and producing a healthful and comfortable coolness.

Dioscorides speaks of it under the name *cupros*, or *cypros*; and Pliny says that the best qualities were brought from Ascalon, in the neighborhood of which, in later times, Clusius found it growing abundantly. Some of the caliphs dyed their beards with henna, following the example of Mohammed. It is quite probable that this henna is the camphire of Solomon's Song.

The gum-camphor is obtained from a large tree, a native of Sumatra and Borneo. The gum is found in quantities, and is supposed to be the residue after the evaporation of an oil frequently found in cavities of the tree. Of the two kinds the names of which are given at the head of this section, the dryobalanops is the more precious, being harder and less volatile; but it seldom reaches Europe, the limited supply being exhausted by the mandarins of Japan and China.

The Scripture references to the camphire are but two; and those are found in the Song of Solomon i. 14, iv. 13, where the far-spreading fragrance of the flower is alluded to, and made typical of the pervading influence of the Church under the title of a bride adorned in her loveliness and attractions and a delight to all around through the fragrance of her character and acts.

The henna is represented in the third plate.

COCKLE.

CARYOPHYLLÆ.

Agrostemma Coronaria.

THIS seems to be the plant recognised as the cockle of Job xxxi. 40. It is an Oriental plant, ranging in its growth from the cornfields of the Caucasus to those of the Nile. We have specimens gathered from among the cereals of Samaria; and many have noticed it in various fields throughout Palestine. It is of a smaller size, but of more brilliant flower, than the English and American varieties; yet the same family appears everywhere among the wheat, maize, barley, and other grains. Its name "*coronaria*" refers not to any thing in the nature or appearance of the flower, but to the fact that among the ancient Greeks and Italians it was the flower used at feasts and woven into the chaplets with which guests were crowned.

The Hebrew word translated "wild grapes" in Isaiah v. 2, 4 is but the plural form of the word here translated "cockle" in Job; and, though the same word has been at various times supposed to be the "blackberry-bush," or "noxious weeds," by some, the "night-shade" by Dr. Mason Good, and by Gesenius the "wolf-bane," or *aconitum napellus*, yet the use of the word by Job, "Let thistles grow instead of wheat, and cockle instead of barley," evidently refers us to the cockle, or *agrostemma coronaria*, which even at present is the most troublesome weed

to the barley. The name "cockle" given in the English version is therefore most appropriate, as has doubtless been evident to all who have trodden upon Oriental soil during corn-harvests and noticed the contrast in quantity between the *agrostemma*, which grows in abundance, and either of the others named as substitutes, which seldom appear to interfere with the growth of the grain.

The cockle is not in itself unpleasant to the eye or touch, and the five petals of its corolla are prettily variegated in color. Its associations, however, make it unwelcome. Where grains alone are wanted, there the cockle chooses the soil for its most luxuriant growth, either crowding them out entirely or diminishing the produce. Hence the impression of disappointment and loss always attends the appearance of the cockle. It comes just where it is not expected and where it is most unwelcome. This is the sentiment expressed in Isaiah, where it is said a vineyard was planted, and when the vine-dresser looked for grapes it brought forth cockles, which, with their bright colors, seemed to offer themselves in the place of the expected grapes. So in Job xxxi. 40 the significancy is the same,—namely, that of disappointment as well as of loss; and the moral conveyed by the use of the cockle teaches the necessity of performing good acts and speaking pleasant words in proper places. How often are "apples of gold" rendered more precious by appearing in "pictures of silver."

CORIANDER.

(*Garden coriander.*)

UMBELLIFERÆ.

Coriandrum Sativum.

THE coriander referred to in Scripture appears generally acknowledged to be the plant recognised under that name at present. It is well known throughout the East, and is chewed by peasant and lord, Mohammedan and Christian, for the agreeable flavor it imparts to the breath. It is supposed to be a native of the Levant and of countries farther east of the Mediterranean. Anciently it was used as a medicine and for seasoning food, and seems to have been brought from Egypt to Rome in the time of Pliny for these purposes.

The only reference to coriander in the Scriptures is in comparison with the manna upon which the Israelites fed in the desert; whence we may infer that it was well known in Egypt before the departure of the children of Israel, and was probably used then as now,—namely, as a condiment to flavor food and please the taste.

CUCUMBER.

(*Common cucumber.*)

CUCURBITACEÆ.

Cucumis sativis.

THESE is no plant known more widely than this; and probably the same kind, or a variety, was the plant or fruit referred to by the murmuring Israelites:—"We remember the fish which we did eat in Egypt freely: the cucumbers, and the melons, and the leeks, and the onions, and the garlic." (Numb. xi. 5.) The melons and cucumbers associated in the speech of the people are at the present day planted together in the same fields in various parts both of Egypt and of Palestine; and, as there are no fences surrounding the fields to keep off either cattle or thieves, the little hut or lodge for the guard or watch is still used as anciently. The appropriateness of the figure of the prophet often occurs to the traveller as he sees in the midst of a large field of cucumbers a solitary little hut, scarcely large enough to shield the watchman from the sun. There for hours the gardener sits alone, generally without any thing to amuse or instruct, and unwilling to sleep in the hut or walk in the rays of the scorching sun; and, as no trees or shrubs are allowed upon the field, the little ragged hut has a very desolate appearance as seen above the low and trailing fruit. "The daughter of Zion is left as a cottage in a vineyard, as a lodge in a garden of cucumbers, as a besieged city."

There is another variety of cucumber, growing only around Cairo after the inundation of the Nile, which is highly praised by Hasselquist, called the *cucumis chate*, (Linn.) It resembles in substance the melon, and is wholesome and delicious and very much in request among the natives. The fruit is green and oblong and is called by some “abdellarius,” an Arabic word, signifying the “slave of sweetness.” Egypt has been noted for the varieties of this kind of plant, some of which are eaten unripe as well as ripe, much as our apples are eaten; and no doubt, as this fruit was first mentioned among those longed for by the Israelites, they must have been common in the country they had left. They are described as growing with great rapidity,—so much so that “in twenty-four hours they will actually gain as many inches of volume.”



CUMMIN.

UMBELLIFERÆ.

Cuminum Sanctivum. Linn.
and *Cuminum Cymiorum.*

THIS is a plant bearing a resemblance to the coriander, commonly called the fennel and caraway, both in its growth and in the general properties of the seed. It is a native of all the countries bordering on the Mediterranean, of Syria, Palestine, and Egypt, and is also found in Ethiopia. The seeds are warm and bitter in taste, but aromatic and rather agreeable; and it seems to have served among the ancients for purposes similar to those for which the coriander was used. The Jews sowed it broadcast in their fields and thrashed it out with a rod when ripe. To this custom Isaiah refers in his description of the method of separating the seed:—"Neither is the cart-wheel turned about upon the cummin, but the fitches are beaten out with a staff, and the cummin with a rod," (xxviii. 27.) In countries where circumcision is a usual rite, cummin-seed mingled with wine is used as a styptic after any cut or wound. For this purpose it is thoroughly mashed in wine and applied by the officiating priest; and this seems to have been the use to which the plant was put anciently, the leaves perhaps, as well as the seeds, having been employed. In those countries where the healing property of the seeds and plants is still valued for the purposes just

mentioned, it is more generally applied to wounds, ulcers, and sores in cattle. These sores often arise from the bites and stings of flies, and are also caused by an insect which deposits its eggs in the skin of the cattle. For these troubles, as both preventive and remedy, the cummin has been used for a long time, and was probably one of the most important, as it seems to have been one of the most common, plants and seeds of the Jews. Common and important, however, as it might have been, it was an unattractive shrub, of insignificantly small white flowers in clusters. Its associations, to a Jew, were with wounds and sores, and it might well have been called "an unclean plant." Yet such was the strictness of Jewish observance that even this was tithed; and herein appeared the inconsistency of the Jewish forms, for, whilst they thus obeyed the law in its letter requiring the tithing, they neglected "the *weightier* matters of that law, namely, judgment, mercy, and faith."

In the scriptural mention of this plant, allusion is made to its commonness; and, inasmuch as even cummin was tithed, we see the strong tendency of Jewish ceremony to degenerate into mere formality. It may be called the "legal plant" rather than the "holy plant,"—which seems to indicate the sentiment of Linnæus in his nomenclature. The middle plant in Plate II. is a blue variety of cummin and most common,—that referred to above being the same in form but of a whiter blossom.

DOVES' DUNG.

(*Star of Bethlehem.*)

LILIACEÆ.

Onithogalum Umbellatum.

THIS name occurs only in 2 Kings vi. 25, where it is said that in the famine at Samaria a “fourth part of a cab [or nearly a pint] of doves’ dung was sold for five pieces of silver.” This has not generally been supposed to be the name of a plant; and, if not, perhaps the use to which the substance spoken of was put was such as might be made of any fertilizer. Some, however, have supposed that the name is that of a certain little plant, the bulbous root of which was eaten not long after the times of our Saviour; for Dioscorides says that it was dried, pulverized, and mixed with bread-flour, and was eaten raw as well as roasted, and speaks of thirty-six known species. In the times of Laurentius, the peasants of Italy and the neighboring countries ate the roasted roots of the onithogalum as they would eat chestnuts. The Rabbins think that the contents of the crops of pigeons was the article referred to, and that after full meals from the encampments of the besiegers those birds fled to their homes in the besieged city. But it seems probable that the pigeons or doves would have been slain for food long before the extremity of the famine; and, in any case, they must have been slain to obtain the contents of the crops,—when it would

be likely that the price of the doves would have been stated as well as that of the contents of their crops. A writer has quoted a chronicle of the history of England to show that in 1316, during a terrible famine, the poor ate *pigeons' dung*. But another writer says that the *onithogalum* is a native of England, and that at that time it was commonly eaten in Italy and other countries, and that the *pigeons' dung* of the chronicle was therefore nothing else than the doves' dung of Scripture.

The root of the *onithogalum* has been used in Syria, it is said, in all ages as an article of food. In many places we saw it growing with all the vigor of an indigenous plant; and it is found at the present day about the hill-sides and fields of Samaria. Great numbers grow in the garden of Campo Santo at Pisa; which has been attributed to the fact that, the soil of this garden having been brought from Palestine as ballast in ships, the *onithogalum* enjoyed its native soil though under an Italian sky. The singularity of the name as applied to a plant will not appear so great when we reflect that "pigeons' food" is the name of another plant, which, in the dictionaries of 1737, is found compared with one then generally known as the "crane's bill."

The root of this plant is rough-coated and irregular, tuberous rather than bulbous, and of medium size. The bulbous root and the plant are represented in Plate IV. and occupy the middle of the group.

FITCHES.

(*Common Vetch.*)

LEGUMINOSÆ.

Vicia Sativa.

THIS small pea, though of a coarse and not very agreeable character, is an article of food, and in the great famine of 1555, according to one writer, saved thousands from starvation. In England it is used as green fodder for cattle; and the plant is found wild in almost every country, and admired in some places for its beauty.

Dr. Lowth considers that the fitch of Isaiah was the common dill, apparently from the impression that the mention of the cummin in the same connection required that the word rendered "fitch" should signify a similar plant. It will be seen, however, that the treatment of the cummin, as described by Isaiah, is different from that of the fitch referred to in the same passage; and the manner of threshing suggests that the plant-seeds beaten out with the "stick" would be coarser than those separated by a "rod." This makes it probable that the fitches of Isaiah were coarser than the cummin, and were the same as those of Ezekiel iv. 9, about which there is little doubt that they were vetches, and not rye, as some have supposed,—several circumstances, together with the plural form of the word in the Hebrew, rendering it doubtful whether rye could have been referred to at all.

A distinction was made in favor of the poor among the ancient Israelites, they being required to offer only a pair of doves in redemption of their first-born, while the rich were required to furnish a lamb. Hence, as doves and pigeons derived their principal sustenance from the fitch, it is probable that an extensive cultivation of this plant existed with a view to sustain the numerous flocks of this bird, the cherishing of which must have been gratifying to the Jews. Some writers suppose that the quantity of the seed required for this object was all that gave importance to the plant, since, though nutritious, it was of a character too coarse to be used generally for human food.

There are pleasant associations connected with this plant as referred to in Scripture. It speaks of innocence in itself, and indirectly of maternal love; for it was an unobtrusive plant, seldom growing when not wanted, and easily eradicated if not welcome. It was gathered to feed the most harmless of birds,—the dove,—and in this there was not only a religious motive, but a peculiarly pleasant one; for, as we have already said, the dove—the symbol of innocence—was offered at the temple as a redemption for children. Those doves took the place of the lamb, which was itself the symbol of our Saviour, of whom it was said that he called the little ones to himself and blessed them, he “gathered them with his arms and carried them in his bosom.” Thus appears more plainly the reason why the lamb was not used in the Jewish ceremonies instead of the dove: it was simply because of the mercy of God in his government, mindful of the wants and need of the poor, who

were not always able to purchase a lamb. Now, as the lamb was the symbol of the Saviour and the dove took the place of the lamb, we may suppose that the dove, being offered for the redemption of the infants, alluded in some way to the redeeming power and affection of the Messiah to come as applied to children. No mother who desired the blessing of God ever neglected the sacrificial dove, the emblematic redemption of her child; and closely associated with this dove, as we have seen, was the cultivation of this little, humble plant. It is supposed that at one time in the history of the Israelites there were nearly half a million births annually. In such a case, the number of birds necessary for offerings would justify the supposition that the cultivation of this plant was correspondingly important and extensive.



FLAGS.

(*Water-Weeds.*)

FLUVIALES.

Cyperus Esculentus, or
Zostera Marina.

IT appears that the word "flags" was applied to several water-plants, or fluviales; and the two varieties named above are the most interesting and perhaps the nearest to the Scripture kinds. Two different Hebrew words have been translated "flags:" hence there is some room for a variance of meaning to the word as it occurs in our English version. Moreover, in Gen. xli. 2, 18, and Job viii. 11, the word *ahu* is first rendered "meadows" and then "flags," and the word, being of Egyptian origin, probably refers to any grassy weed or flag in marshy land or pasture. It is supposed that the *cyperus esculentus*, a flag bearing an edible root containing both oil and starch and which was eaten formerly as a kind of sweetmeat, represents the plant referred to in the passages mentioned. The other word, *sûph*, occurring in Ex. ii. 3, 5, is probably only a general name for sea-weeds. Hence the Red Sea was called the Sea of *Sûph*, or Sea of Weeds, from the number which grew around it. Great quantities of this weed float upon the water; and it is supposed to have suggested the name "red" for the sea, from the color of the leaves and

stems, which are of a reddish hue as they appear on the coast and on the surface of the waters.

The *zostera marina* has a riband-like leaf, and grows on the coast of Palestine: it is said to be also found in the waters of the Nile. The twisted, straw-like cords which come around Florence flasks of oil are made from the *zostera*: it is thrown up from the sea in immense bundles, and is used for various purposes, especially as a barrier against the inroads of the waves. Some of the leaves or strips are admirable as stuffing for mattresses, as they are said to keep away vermin. When first thrown ashore, it is eaten by the horses and by swine. Probably this is the plant to which Jonah referred when he exclaimed, "The depths closed me round about; the weeds were wrapped about my head." The flags present a beautiful appearance along some shores and banks, and their greenness contrasts agreeably with the blue of the waters and the various shades of the land. This greenness was significant of health and life. Hence the reference of Isaiah to the withering of the flags had in view the cutting off of the supplies of water, and the scorching effects of the sun, "when the brooks should be emptied and dried up;" for, says Job, (viii. 12,) "Without water, whilst it is yet in its greenness and not cut down, it withereth before any other herb."





FLAX.

[*Linum Usitatissimum*.]

ALMOND.

[*blossoms*.]

HENNA.

[*Lawsomia Inermis*.]

Valley of the Jordan near Jericho.

Designs by the Author.

Pr. in Colors by T. Sinclair, Philad^a.

FLAX.

(*Common Flax.*)

LINEÆ.

Linum Usitatissimum.

FLAX was introduced into Egypt and used for linen at a period so far back that it is beyond the knowledge of man. It grows wild in most European countries and is found eastward as far as China. Notwithstanding the Egyptian fabrics were remarkable, their excellence has been much exaggerated, and they did not equal either in fineness or beauty similar fabrics of the present day. The sculptures on the monuments have preserved for us a very complete representation of the whole process of preparing the linen, from the time the flax was growing to the period of its preparation for wearing. The word is first used in Ex. ix. 31, in connection with the terrible hailstorm in Egypt which destroyed the flax and barley, the former being just "bolled," or in the seed. From its mention in connection with barley we may rightfully infer that the time of gathering the flax in Egypt was about the 1st of April. During the wanderings of the Israelites in the desert, the flax could not have been planted so as to come to perfection in time to be gathered before they would be required to remove; and they therefore obtained their linen from their neighbors or from travelling caravans and merchants. Yet, on their entrance into Palestine, Rahab, in

Jericho, hid the spies sent by Joshua under flax on the house-top, which proved that it had been introduced into the land before the arrival of the Israelites. The flax after preparation was twisted around the end of a stick, called the distaff, from which it was drawn and fastened to the end of a short spindle. This spindle, when rapidly whirled by the fingers, twisted the thread. This method of making woollen and linen thread is still pursued in many parts of the East and in Europe among the peasantry. It is frequently represented on Roman and other ancient marbles, and is referred to by Solomon in Prov. xxxi. :—"She layeth her hands to the spindle, and her hands hold the distaff." The finest linen came from Egypt, notwithstanding it was spun and woven in Palestine, Greece, and Italy. Accordingly, the Egyptian fabric commanded a high price; and one of the proofs of the luxury of Tyre mentioned by the prophet Ezekiel is seen in the fact that the ships of Tyre were furnished with sails of the fine linen of Egypt; and among the denunciations by the prophet Isaiah (xix. 9) it was mentioned that "the Egyptian workers of fine flax should be confounded,"—this being the distinguishing art of the land and a source of its wealth. The rich desired to obtain the finest linen, which always commanded the highest price: hence, as a token of the luxury and wealth of the rich man spoken of in Luke xvi. 19, it is said he was clothed in purple and "fine linen."

Linen was worn among the priests, both in Egypt and in Palestine, and was supposed to be preferable to woollen, because it did not harbor vermin, which could not be said of any other

fabric worn at that time. Whatever may be the truth, it is certain that the Jewish priests were always accustomed to wear it. When Samuel was presented by his mother to wait upon old Eli in the temple, he was clothed with a linen ephod. So likewise, when David danced for joy that the ark was recovered, he performed a religious ceremony, and, according to the custom, clothed himself with a linen ephod. Thus it appears that linen formed the most important fabric for clothing. The wealthy sought for it, the priests required it, the merchants used it, and the dead were buried in it.



THIS gum bears some resemblance in smell and in medicinal qualities to assafoetida, but in a much more modified degree of offensiveness. It exudes from the branches of a plant, and was used as one of the four "sweet spices" in the holy perfume of Ex. xxx. 34, where alone it is mentioned. In view of the seeming incongruity of calling by the name of "a sweet spice" a gum which smelled somewhat like assafoetida, it should be remembered that the compound perfume would differ from any of its ingredients, and, moreover, that this perfume was to be placed in the tabernacle of the congregation,—where the object probably was to counteract the odors which would always in some degree arise from the animal sacrifices, and from the sprinkling of blood which took place at this tabernacle of the congregation, as recorded in Numb. xix. 4. The smell of such a gum would neutralize other odors more effectually than would the perfume of those of a milder and sweeter nature. Eastern nations, however, differ from Occidental in regard to the choice of perfumes and as to what constitutes the agreeable or disagreeable. A lady who visited India writes that, on entering a temple in Chimchore, the priests presented her with almonds and raisins sprinkled with assafoetida as rendering them more acceptable; for in India that drug is chewed as a luxury.

GARLIC.

LILIACIA.

Allium Ascalonicum.

THE garlic *ascalonicum* was introduced into Western Europe by the Crusaders, who found it near Askelon, in Palestine: whence its name. It is of a delicate kind, called eschalot, and very different from the disagreeable sort known as garlic at the present day, which, growing wild, is eaten by the cows, to the no small discomfort of those who dislike the taste in milk and butter. It is probable, however, that the Israelites, when in Egypt, were not particularly choice as to the kind of garlic, especially as Herodotus, in describing the diet of the laborers employed in erecting the pyramids and other monuments of Egypt, enumerates leeks and onions, with garlic, as forming part of their fare. The Israelites in their bondage would probably become accustomed to the same food; and hence they recall garlic as forming a part of the savory dishes of Egypt, preferring bondage and ignominy under Pharaoh with the garlic, the leeks, and the onions, to liberty and the prospect of a rich country under the government of God. It is in connection with the murmuring of the Israelites that garlic is mentioned, and only in that passage, (Num. xi. 5;) wherein it appears that it was eaten with fish.

GOURD.

CUCURBITACEÆ.

Cucumis Prophetarum,
Colocynth, or little gourd.

EUPHORBIACEÆ.

Ricinus Communis,
Palma Christi, or Castor-oil.

THE word "gourd" in the English version occurs in two distinct passages of Scripture,—in 2 Kings iv. 39 and in Jonah iv. 6, 7, 9, 10. In the original the words are different, though in both places translated "gourd.*" When the sons of the prophets, in the time of Elisha, prepared for a dinner, "one went into the field to gather herbs, and found a wild vine, and gathered thereof wild gourds his lap full, and came and shred them into the pot of pottage, for they knew them not. So they poured out for the men to eat. And it came to pass, as they were eating of the pottage, that they cried out and said, O thou man of God! there is death in the pot." From this description we infer that the gourd here spoken of is the *cucumis prophetarum*, a very bitter and poisonous plant, well known in Palestine, from which an extract is made, frequently used as a medicine, called colocynth. This is the gourd the name of which stands first in order at the head of this section.

What has been said of the gourd of Jonah, however, seems to be descriptive of another plant at present growing abundantly in the Holy Land. This plant is the castor-oil-bush, or

the *ricinus communis*. The Arab version of the Scriptures makes the ricinus the gourd of Jonah,—and with good reason; for the present Arab name of that plant is of the same form with the word translated “gourd” in the book of Jonah. At the present day it furnishes oil for lamps: we burned it at Sarepta and at other places during our travels in the Holy Land.* The oil expressed from the seeds was used anciently for the same purpose and for other domestic uses, but, so far as we can ascertain, was not used medicinally as at present. The Jews in London burn it as one of the five kinds of oil which their tradition permits to be used for their Sabbath lamps, and the name given it is the “oil of kik.” The Hebrew name *kikayou* is preserved in form by Pliny, who calls the plant *kiki*, (the same as *cici*,) and describes it as the castor-oil. The plant grows to perfection in Palestine, bearing broad and pleasant green leaves, very shady, and is liable to wilt and shrink on slight injuries. All these circumstances point plainly to the *ricinus* as the gourd of Jonah.

It was early maintained that this gourd of Jonah was the ivy; and from so small a cause as a disagreement on this point a large portion of the early Christian Church was involved in bitter quarrels,—to such an extent that St. Jerome and Rufinus of Aquila excommunicated each other before the vexatious question was settled.

* Said to be eaten: see “Palestine Past and Present,” page 109.

GRASS.

(*Sheep's Fescue and Flote Fescue.*)

GRAMINEÆ.

Festuca Fluitans and
Glyceria Fluitans of Brown.

IN the Holy Land, as in almost every other country, grasses grow in innumerable varieties. The scriptural term is often applied to all that clothes the ground with verdure, as in St. Matt. vi. 30, where the Saviour, having spoken of the lilies of the field in their beauty, remarks, "Wherefore, if God so clothe the grass of the field, which to-day is, and to-morrow is cast into the oven, shall he not much more clothe you, O ye of little faith?" The general use of the word throughout the Scriptures shows that the word was used as at present to denote any tender and fragile growth, springing up soon and rapidly withering after the scythe has passed over it.

But there is a special variety noticed by Hasselquist, as peculiarly beautiful and important, growing in the hilly parts of Palestine, and indicating the fitness of those places for the pasture of flocks. The botanical name of this variety we have given, the common name of which is "sheep's fescue." Others speak of its growth in the northern parts of Asia, and of the Tartar tribes moving their herds in search of pastures where it is to be found more abundantly. From various ancient writings

it is plain that the general method of cutting and gathering grass for hay was the same in early ages as at present; and from Amos vii. 1, 2, it appears that the mowing took place twice in a year. In Oriental cities the flat stones forming the floors of the roofs frequently separate and allow of an accumulation of soil in the seams or cracks between them; and where the inmates are careless and not very cleanly, there are always little growths springing out from the crevices of the walls and floors. Hence the occasion for the scriptural references to the grass growing on the house-tops, springing up from some floating seeds which had found a lodgment in a scanty soil, which affords room for the roots till the plant has grown up, and then, neither soil nor moisture being sufficient, it perishes before coming to perfection. This is the "grass upon the house-tops which withereth before it groweth up; wherewith the mower filleth not his hand, nor he that bindeth sheaves his bosom." (Ps. cxxix. 6, 7.) We have in our possession a beautiful little yellow poppy taken from the angle of the steps leading up to the Mosque of Omar, which had there found soil enough to grow and flower. These small plants may also have been included in the general term "grass," although botanically of a very different class.



HEATH.

(*Common Heath, Heather, or Ling.*)

ERICÆ.

Erica Vulgaris.

THE two words translated "heath" in Jer. xvii. 6 and xlviii. 6 are different from each other. The former, however, is supposed to denote the true heather, which in varieties is found scattered over Europe, Asia, and Africa. Hasselquist, who visited Palestine as a botanist, discovered great quantities of it growing on the plains around Jericho and north of the Dead Sea. This portion of the land, especially near the borders of the sea, is much injured by deposition from the salt breezes; but even where the soil contains considerable saline matter the heather seems to flourish as well as upon the more pleasant parts of the valley of the Jordan farther north.*

The fact of its growth near the Salt Sea makes the allusion to the heath so impressive in that passage of the prophet Jeremiah where he speaks of "the man that departeth from the Lord and maketh flesh his arm. For he shall be like the heath in the desert, and shall not see when good cometh, but shall inhabit the parched places in the wilderness, in a salt land, and not inhabited."

* See a description of this soil, and of the effect of the breezes, in "Palestine Past and Present," page 445.

On the plains near Joppa it grows in such abundance that, according to some authorities, it is gathered and burned by the soap-makers for its ashes. The heather is visited by the bees for the honey they can make from its little flowers; and these have probably for many ages been the source from which a very agreeable quality has been derived. The Crusaders were so fond of the honey of the Holy Land that many of them died because of over-indulgence. The plant is seldom seen but by itself and in places not very favorable to richer growths. It bears a small leaf, and there is a uniformity in size in flowers and leaves.

The sentiment suggested by the scriptural context in which this plant is referred to is that of *loneliness*,—which may be truly associated with the heath, as it seldom grows in habitable places.

The “heath” of Jer. xlviii. 6 is properly supposed to be the tamarix or juniper.



HEMLOCK.

(*Spotted Hemlock.*)

UMBELLIFERÆ.

Conium Maculatum.

WHILE the word "hemlock" occurs only in Hosea x. 4 and Amos vi. 12, the Hebrew word of which "hemlock" is the translation is rendered "gall" in various passages, but seems to refer to the hemlock or its extract.

Hosea says that hemlock "springeth up in the furrows of the field." The plant is somewhat similar in appearance to the anethum, the coriander, or the anise, and is of the same natural order of umbelliferous plants. But these are wholesome and pleasant plants, while the hemlock is poisonous. Hence the fitness of the simile of Hosea, who likens the act of swearing falsely in making a covenant, to the hemlock, springing up in the furrow, imitating in appearance the anise or other pleasant plants, and yet proving to be the poisonous hemlock when gathered.

There was evidently a bitterness in the hemlock-juice, which, however, was used among the Jews to lessen the pain accompanying the violent death of criminals. To those who were about to be stoned, there was given, previous to execution, a drink of wine in which was put myrrh mingled with the juice of the hemlock, to inspire them with courage to meet death and to lessen its pain.

With this purpose we may suppose that some friendly person, to enable the Saviour to endure the terrible sufferings of crucifixion, offered him this customary drink, namely, vinegar, or sour wine, into which myrrh and hemlock, called gall, had been put. In Mark xv. 23 myrrh is spoken of, but in Matt. xxvii. 34 the gall alone is mentioned. Of this our Lord refused to drink,—not on account of the bitterness of the draught, as one might suppose, but because the holy offering which he was about to make he intended to be complete and the sacrifice unmitigated in its pain,—which would not have been the case had he accepted the proffered opiate. He suffered as the Lamb of atonement with a full consciousness of every pain, so that nothing should occur to lessen the worthiness and costliness of the world's solemn offering. The offering of the drugged wine has frequently been confounded with the moistening of the lips of the dying Saviour by means of the vinegar on the sponge; but the acts were separated from each other by a considerable time, the former being intended as the drink which, as we have said, was customarily given before the punishment.


Large potions of this hemlock caused death, generally preceded by numbness. Of this poison it is supposed that Socrates died, having been condemned to drink the unmingled juice of the hemlock.

HYSSOP.

(*Common Hyssop.*)

LABIATÆ.

Hyssopus Officinalis.

 BUNCH of the common hyssop, tied to a small stick and dipped in the water of purification, was used for centuries in the ceremonial of the early Christian Church, for the purpose of sprinkling places and persons to be purified; and in consequence of this early practice the brush used by priests in Roman Catholic churches is still in many places called the hyssop. The plant was early considered medicinal, and hence held an important place in the catalogues of medicinal plants: it was used as a remedy for coughs and for affections of the throat and chest. It has been very plausibly suggested that the hyssop upon which the sponge dipped in vinegar was put, at the crucifixion, was that used for purifying the people before the Sabbath came on, and that the same hyssop, attached to a reed, (which was probably a general name for the cedar stick to which the bunch might have been fastened,) had already been used in purifying the people for the coming Sabbath. For the hyssop, scarlet, (perhaps the scarlet thread,) and the cedar were conjoined in that purification for sin which appertained to the temple service, as seen in Num. xix. 6; and the hyssop was used in sprinkling every thing,—even the tent and vessels of the unclean. There was a solemn significance

in that act, wherein Christ received the hyssop and vinegar but refused the myrrh. The hyssop was the symbol of purification by the law, and when our Saviour received it, it was the last legal purification which the hyssop should ever make on earth. It had acted its part for fifteen hundred years, and millions had been purified by it. It was a necessary part of that wearisome and bloody ceremonial, which had so long typified the coming Saviour, the true Lamb of God, of whom all the lambs of Jewish sacrifice had been but the faint emblems. But the work was ended; the Lamb of God had completed his suffering and his sacrifice; henceforth the cross should be the Christian's purification; and, receiving the little floral symbol to his lips, he became "the end" as well as "the beginning" of the law, and exclaimed, "It is finished!" and, as if in sympathy with that solemn utterance, the veil of the temple, which covered the holiest that the law ever knew, was rent in twain. Henceforth Jesus and his blood should be the all-atoning sacrifice for sin: the use of the hyssop and the bloody sprinkling should terminate in him, and in the power of the cross to cleanse and to atone forever.

It has been supposed that the *capparis spinosa*, or common caper, should be added to eighteen others mentioned by Celsius, as plants supposed at various times to be the hyssop; but there is not sufficient reason to differ from the prevalent opinion that the hyssop the name of which we have given is that spoken of in Scripture. It is a little plant, with long, lanceolate leaves and small flowers, and is represented in Plate IV.

LEEK S.

LILIACEÆ.

Allium Porrum.

LEEKS are found as natives of all the countries bordering on the Mediterranean, especially in Egypt, where the cultivators of the soil consider them a pleasant article of food. Formerly they were sacred; but it frequently happens that articles offered in sacrifices, and considered sacred in that sense, were nevertheless allowed for food. The inhabitants of some districts of a country considered certain articles sacred which were not thus viewed by others. Hence no objection to the credibility of the account that the Israelites ate leeks can be found in the fact that they were held to be sacred in Egypt. Onions were adored at Pelusium, but were not considered equally holy at other places. This might have been the case with leeks.

The only passage in which this plant is mentioned is in Num. xi. 5, where it is associated with garlic and onions.

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LENTIL.

(*Common Lentil.*)

Cicer Lens, and
Ervum Lens. (Knight.)

LEGUMINOSÆ.



AMONG the various kinds of pulse or beans the lentil is mentioned first, and it formed one of the most ancient articles of food. The lentil is one of those plants which formerly flourished where now it seems to be rapidly disappearing. Other articles of food are taking its place, and its cultivation is therefore of little importance. The plant is inclined to fasten itself after the manner of the pea, bears similar blossoms, and has a pod in which the small brown or reddish seeds or beans are found.

Esau's pottage consisted of red lentils. They are mentioned among the articles of food furnished to David when flying from Absalom, as recorded in 2 Sam. xvii.; and the prophet Ezekiel speaks of them as forming with other grains the material of the bread he was to use in his affliction. These are the only places wherein it is mentioned in the Scriptures. The French traveller D'Arvieux speaks of a tradition existing among the Arabs that Esau sold his birthright in Hebron, near the cave of Machpelah; and in commemoration of this event a college of dervises at this place daily cook pottage of lentils and distribute to the poor. The red lentil is supposed to be the best of the three kinds cultivated in the South of Europe, Barbary, Egypt, and the Levant.

LILY.

LILIACEÆ.

Lilium Candidum.

THIS beautiful flower is said to be a native of Palestine, and seems formerly to have flourished more extensively than at present. The lily is spoken of in Solomon's Song, but is, according to Sprengel, in the Arabic and Chaldee versions translated "jonquil" or "narcissus."

This latter plant is very similar to the daffodil; and the Arabs gathered it for us around Jericho, where it grows wild in profusion. It springs up, in January and February, along the damp borders of streams or in shady places near rocks. Some have supposed that the capitals of the pillars of Solomon's temple, which in Kings and Chronicles are said to have been made after the likeness of lilies, were modelled after the Egyptian lotus. The greater probability is that they were in imitation of the lily, as it is reasonable to suppose that the architect would copy the flowers of the land rather than those of Egypt. The same may be said of the ornaments of the molten sea, which had its brim "wrought like to the flowers of lilies."

There is a tradition that the lily anciently grew in such profusion on the plains of Sharon, east of Joppa, that it was customary to use the dried stalks of the plant to heat the ovens wherein bread was baked. To this luxuriant growth the prophet Hosea probably refers where he writes (xiv. 5) of Israel, that "he shall grow as the lily, and cast forth his roots as Lebanon."

MALLOWS.

(*Jew's Mallow.*)

MALVACEÆ.

Corchorus Olitorius.

OF the several varieties of mallow native in Syria, the one above named seems to be beyond doubt the kind referred to by Job, (xxx. 4:)—“But now they that are younger than I have me in derision, whose fathers I would have disdained to have set with the dogs of my flock. For want and famine they were solitary; fleeing into the wilderness in former time desolate and waste: who cut up mallows by the bushes . . . for their meat.” The mallow-leaves have been in later times used as pot-herbs; and in A.D. 1600 it was written in Purchas’s Pilgrims, “After the shower, while our horses were preparing, we walked into the fields near unto the church, [of Lacmihe,] and saw many poor people gathering mallows and three-leaved grasse. I asked them what they did with it; and they answered that it was all their food, and they did eat it. Then we took pitie on them, and gave them bread, which they received very joyfully, and blessed God that there was bread in the world, and said that they had not seen bread the space of many months.” It is said that this mallow is still eaten in Egypt and Arabia.

There is a podded mallow,—the *hibiscus esculentus* of Linnæus,

—bearing the name of okra, a native of the Levant, and not a stranger in this country, used when green or unripe, in soups. This is supposed to be of the same class as the Jew's mallow; and it is certainly very similar in the form of its flowers and fruit.

The Scripture representation proves that it was the food of the poorest classes; and the Hebrew term *malluach* may have given rise to the present name.



MANDRAKE.

SOLANACEÆ.

Atropa Mandragora. (Officinalis.)

THE mandrake, which in European countries has a white flower, bears a purple flower in Palestine. The root is like a parsnip in color and shape, and when old is forked, and runs into the ground to the depth of about four feet. Just above the root is a tuft of leaves, from the midst of which spring the flowers. The fruit of the mandrake in Palestine, like the flower, differs from the product of the plant in other countries,—being as large as a small apple, and of a fragrant smell and ruddy color. Many very superstitious notions were connected with the singular form of the mandrake-root, and sorcerers were supposed to be able to extract poison from it. The belief was, that when the plant was drawn from the earth it uttered such an awful shriek that he who drew it forth could not live after hearing the cry. Hence a dog was fastened to the plant in the evening; and, struggling to get free, he tore up the root and perished at the horrible cry which it uttered. In the morning the dead dog and the root were found fastened together. The root was then subjected to the witches' art and the poison extracted. To this superstition Shakspeare alludes in the Second Part of Henry VI., wherein he makes Suffolk say,—

“ Would curses kill, as doth the mandrake's groan.”

But science has triumphed over ignorance and superstition, and the mandrake is now eaten as harmless and even wholesome food. Its soothing and soporific powers were of service before the juice of the poppy superseded it; and so late as the time of James I. the narcotic virtues of the mandragora were known and applied. It has been found in Galilee and in Judea. Burckhardt speaks of it, and Maundrell heard of it as growing in Samaria. By the Arabs this plant is called "tufah al Sheitan,"—the devil's apple. It is represented in color and shape in Plate V.



MELON.

CUCURBITACEÆ.

Cucumis Melo.

IT is surprising how great a variety of plants of this class exist at present in Egypt. It is probable, however, that a number of these varieties were unknown during the residence of the Israelites in that land. The only passage where the word "melon" occurs in our version is that wherein their dissatisfaction is spoken of, and their weeping for the pleasant fruits they had left behind them. Nothing would have been more likely to be remembered than the melon; for this pleasant, cooling fruit was singularly adapted to quench the thirst which they suffered in the fatiguing journeys to which they were subject during the forty years' life in the desert. The melon named above seems to be nearest in kind to those referred to in Num. xi. 5, and does not materially differ either in size, taste, or shape from the melon known in many of our Southern States.



MILLET.

(*Common millet.*)

GRAMINEÆ.

Panicum miliaceum.



MILLET is one of the common grains of Palestine, and has been cultivated there from the earliest times. There are two sorts, the white and the yellow, both belonging to the Holy Land. Other and perhaps better varieties exist, such as the *condigerum*, with a spiked panicle, and the *effusum*, with scattered panicle. But these are found in Germany, France, and England. The Guinea corn, (*holcus sorghum*,) which some have supposed to be alluded to under the Hebrew word translated "millet," is peculiar to Africa and not to Palestine, which is not the case with the millet, and therefore the latter is most likely the plant spoken of in Scripture. The reference to it occurs only in Ezek. iv. 9, where it is enumerated as one of the components of that bread which was a type of the nature of the prophecy.

MINT.

(*Spear-mint.*)

LABIATÆ.

Mentha viridis.

THIS variety of mint, rather than the peppermint, seems to have been cultivated and used in Palestine. Pliny speaks of the various dishes in which the mint appeared to give a particularly greeable flavor. It grows readily everywhere, and is therefore of little value, especially in Judea. Hence the force of our Saviour's words:—"Woe unto you, hypocrites! for ye pay tithe of mint, and anise, and cummin, and have omitted the weightier matters of the law." St. Luke adds rue, and speaks of other herbs. The sentiment is the same; for the plants named were of the simplest and cheapest sort. The Jews tithed the simplest, meanest herbs,—which exhibited their exceeding carefulness of form and their corresponding want of reality. The fact that it is mentioned in Scripture only twice, and each time in allusion to the same custom, shows that its importance must have been very slight indeed. Some have supposed that it was one of the bitter herbs with which the Jews ate the passover. The variety is represented in Plate II.

MUSTARD.

(*Common black mustard.*)

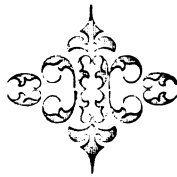
CRUCIFERÆ.

Sinapis Nigra.

“**I**NTO what is the kingdom of God like? It is like a grain of mustard-seed, which a man took and cast into his garden; and it grew, and waxed a great tree, and the fowls of the air lodged in the branches of it.”

Objection has been raised to this simile, on the ground that the mustard is not a tree, and that it is not sufficiently large to bear the weight of birds. But there are several facts to be noticed in connection with this passage, which occurs in St. Luke xiii. 19, and with slight variation in Matt. xiii. and Mark iv. The trees upon which birds rest are frequently low, and the terms of the simile are such that it is very evidently intended as figurative. But, though a shrub would be large enough to answer the purposes of the figure, some former growths were evidently greater than at present. Sir Thomas Browne says that if we accept of but half the story noticed by Tremellius, from the *Jerusalem Talmud*, of a mustard-tree that could be climbed like a fig-tree, and of another under whose shade a potter daily wrought, the expression may be literally understood. We have frequently passed mustard-trees, during our travels in the Holy Land, in which small birds lodged, and which, in contrast with the seeds from which they had sprung,

were great trees. This, I conceive, is all that a liberal interpretation of the passage could demand. There are several varieties of the *sinapis*, or mustard-tree, in Syria, mentioned by Hasselquist, but not used generally by the natives. One of these varieties, near Acco, and on the plain of Esdraelon, grows to the height of nine or even ten feet, and is several inches in circumference, producing branches sufficiently large to bear the weight of a bird. In several works the *phytolacca* is supposed to be the mustard of Scripture. This plant, however, is a well-known native of America, having been introduced into Europe in comparatively modern times, and is thought to have no claim to be considered the mustard referred to by the Evangelists.



URTICEÆ.

NETTLES.

Urtica Dioica.

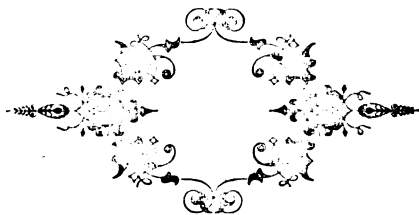
Urtica Pilulifera.

DASSELQUIST found both these varieties of the nettle existing in Palestine. It grows near cultivated spots, and frequently in neglected and ruined places. Every observant traveller can testify to the luxuriant growth of the nettle amid the broken walls and ancient remains of the Holy Land. The truth of the words of the prophets Zephaniah, Hosea, and Isaiah seems to be written on all the fallen palaces and fortresses throughout the land:—"Thorns shall come up in her palaces, nettles and brambles in the fortresses thereof."

In each of the five places where the word "nettle" occurs, the signification seems plainly the same, and the plants alluded to must be very similar in nature although there are two different words in the original. The difference between the two, however, may not be greater than that which exists between the words "briers" and "thorns" in English. It is the very plant which, on account of its sting, would be first eradicated from the garden. Hence the force of the remark of the prophet that it should be found in the ruined palaces and houses.

There seems to have been a kind used as a potherb, and one which had the quality of curdling milk without communi-

cating any disagreeable taste; for this reason it is supposed that it was not utterly despised in Judea, which was partly a dairy country. The sentiment associated with it, however, was one of utter desolation; and hence wherever it was found it was the sign of either desertion or ruin.



THE onion of Egypt and the surrounding countries, though of the same order as that found in our own and other northern lands, is greatly different from it both in regard to flavor and strength. Very few would recognise in the strong and acrid juice of the onion of Occidental lands any similarity to that of the onion of the Orient, which forms so large a part of the dishes of an Eastern dinner, fried with almonds or pistachio-nuts and mixed with dried fruit. The onion was worshipped, as we have already stated, at Pelusium.* The reason seems to have been that the onion, which was supposed to be the squill, and grew on the shore, was considered a remedy for the marsh-fevers, and flourished nowhere in such abundance as around Pelusium. This squill had a root similar to the onion, and was called by that name.

* See LEEKS.

PANNAG.

(*Ginseng.*)

ARALIÆ.

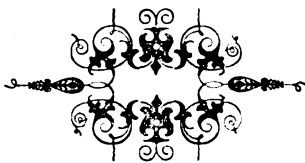
Panax Quinquefolium.

THE word occurs only in Ezek. xxvii. 17. The word translated “*delicately*” in Prov. xxix. 21, which is from the same root as that rendered *pannag*, expresses tenderness and delight, and is frequently used among the Rabbins in this sense. More than one author suggests the *panax*; and, as the reasons for the suggestion are good, I shall present them.

The plant is cultivated extensively in China and Chinese Tartary; and from Pliny it appears to have been as much valued by the ancients as it is at present by the Chinese. It was considered such a universal cure for ailments that some have supposed the modern word “*panacea*” to be derived from it. There is a *panax* found in North America, but far inferior to that of the East,—where there exists a variety so excellent in kind as to have been used by the ancient Italians as a pot-herb. Among the Chinese for more than a half-century past that variety of *panax* called ginseng was considered an antidote to every poison, and efficacious in restoring health to the weak. It was described as a precious and delicious root, and in all these senses answers to the Rabbinical description of the pannag. In Ezekiel the pannag is associated with balsam, which was

used for many purposes; and, as the *panax* was of a similar character in many respects, and even chewed as a luxury, it is supposed that it might also appropriately be associated with balsam, honey, and oil, in the passage of the prophet.

I have given the above as the most probable supposition, provided that the pannag of Ezekiel is not the name of an ancient town noted for the excellence of its wheat, just as Minnith was. The termination of this word is an unusual one for towns; but in this respect it does not stand alone, for Ziklag is well established as the name of a town. The probabilities, however, are greater that the name is that of a plant, and of all plants the above seems most likely to have been the one indicated. The root is jointed, fleshy, and tapering, of a dark-yellowish tinge, somewhat stimulant, and slightly bitter.



PAPER-REED.

CYPERACEÆ.

Cyperus Papyrus.

IT has been supposed that Ethiopia was the native country of the papyrus, which naturally from thence descended the Nile into Egypt. It has been found in Italy and Greece; but, as Pliny says nothing of it when referring to those countries, it was probably introduced since the time in which he lived. It also grew along the Upper Jordan, from Paneas to the Lake of Tiberias, according to ancient writers. Its appearance is graceful, but singular; for its stem, sometimes rising to a height of twelve or even fourteen feet, is devoid of leaves and terminated with a beautiful plume rising immediately out of a parted cup or calyx. Near the roots there are sometimes delicate shoots, which, with the roots themselves, were used as food by the ancient Egyptians.

This reed is famous for the uses to which it has been applied in the arts. So far back as the time of Homer it was used for the manufacture of cordage,—as appears from a passage in the *Odyssey*. Boats were constructed of the stem, and sandals were made for the priests from the parts near the roots; the macerated fibres formed cords and ropes; and the plume at the top was used to crown the statues of the goddesses in the temples. The name “papyrus,” which originated the English word “paper,” suggests the most important use of

this reed,—namely, for the manufacture of a material suitable to be written upon. The ancient name of this plant with the Egyptians was *biblos*, which gave rise to the name of the oldest book, the Bible, as the common name “papyrus” did to the modern “paper.” According to Pliny, the method of forming sheets of paper from the reed was as follows. A part of the stem was cut off as long as the page of the intended book. This section was then peeled or unfolded; for the rind of the reed is wrapped together as a little piece of paper would be if rolled between the fingers, and the forming of a page of papyrus was like the unrolling of such a piece of rolled paper. The papyrus, having been unrolled as near to the heart of the reed as possible, was cleaned and glued to other strips, till the desired size was obtained, additional strips having been pasted or glued across the face of the newly-formed page. The whole was then put beneath a smooth surface on which weights were placed, and left to flatten. Though some have attempted to form paper after this method in later times with but indifferent success, it must be remembered that an inexperienced and imperfect trial of one or two sheets cannot be compared with the constant and skilful practice of the ancients.

The delicate material often brought from China and India, called rice-paper, upon which such beautiful paintings can be executed, is not, as many suppose, formed of a rice paste, but is cut from the pith of a rush which grows abundantly upon the banks of the Ganges, and from a plant of the aralia family called *Aralia papyrifera*, or paper ivy, and is prepared very much in the same manner as paper was made from the

paper-reed of Egypt. Herodotus, in speaking of the introduction of letters into Greece by the Phoenicians, says that the Ionians used skins to write upon when the biblos was scarce, and called their books *dipthera*, or *skins*, because they were made of that material. Hence Attalus, King of Pergamus, who lived long after, only invented a method of smoothing and preparing skins for the purposes of writing. He thus became the inventor of parchment only so far as regards the quality, and was not, as some have thought, the first to suggest writing upon skins. This invention of Attalus was one of necessity, following upon the refusal of a certain Egyptian monarch to permit his subjects to export paper,—as some suppose, from a fit of commercial jealousy.

The word in the original translated “paper-reed” occurs in Isa. xix. 7, and is supposed by Celsius to refer to any grassy reed; and the word translated “bulrush” in Ex. ii. 3, Job viii. 11, and Isa. xviii. 2 and xxxv. 7, is thought to be the real and ancient name of the paper-reed. If so, then Moses’s ark of bulrushes was constructed from the papyrus. This seems the more probable, since Isaiah xviii. 2 refers the vessels of bulrushes to Ethiopia, where the papyrus was a native reed. From an examination of the various passages just referred to, and in which the Hebrew word *gome* occurs, we may suppose that the paper-reed is meant. It is the most important reed,—is better suited to the construction of vessels, and is more easily managed in making little articles not requiring much skill in formation. The general sentiment of the context in Isaiah to which we have referred, as alone properly containing the word

“paper-reed,” leads us to infer that the prophet had two classes of vegetation in view,—the wild and the cultivated growth. He speaks of the troublesome times about to come upon Egypt, and of the failure of the waters. “The paper-reeds by the brooks, by the mouth of the brooks, and every thing sown by the brooks, shall wither, be driven away, and be no more.” Here the prophecy seems to have referred to the general verdure by the brooks, which sustained the life both of man and beast, as well as to that which was of use in the arts. Now, the papyrus was only one of the important articles of growth among the reed-kind which grew wild, and if cut off there were others that would support the inhabitants and the cattle, as we have shown under the article “Flags.” But a word which signified all the green and wild reedy growth upon the brooks would naturally be used when contrasting the uncultivated with all that was cultivated. Hence it appears more likely that the prophet referred to all that wild class of growth known as reeds when he used the word *aroth*, translated “paper-reed.” The word, therefore, as occurring in Isaiah, includes all that remained to the flocks and herds, and to the inhabitants, which they were accustomed to use when their crops should fail. The prophet in the above passage, when he adds the assertion, “every thing sown by the brooks,” would be understood to mean the total destruction of every hope of sustenance from the soil. For when the brooks failed the drought commenced; and that was a fearful time when the reeds by the *mouth* of the brooks were unable to grow.



POMEGRANATE.

[*Punica Granatum*]

CHRIST'S THORN.

[*Palurus Nupcu*]

MANDRAKE.

[*Atropa Mandragora*.]

Lake of Tiberias.

Designs by the Author

Printed in Colors by T. Sinclair, Philad^a

POMEGRANATE.

MYRTACEÆ.

Punica Granatum.

OF all the fruits and flowers we have yet described, no one is more ancient and more beautiful than the pomegranate. At the same time, it is the most frequently praised and referred to by ancient and classic writers. Some suppose, with good reason, that the most ancient temple of Hercules was at Tyre, and was in existence before the city was built, or soon after the flood.* With Hercules is associated the pomegranate; and he is represented as coming forth from Hades with a pomegranate in his hand after visiting Proserpine, to whom this fruit was specially dedicated. Hence it was at a very early period a favorite fruit. Many of the Greek deities, with Jupiter, Juno, and Venus, are often represented holding the pomegranate. It was supposed to have sprung from drops of the blood of Bacchus. The fruit is of the size of an orange: some which we have seen, however, are much larger. The rind is bitter, and contains the principle called tannin, and hence has been used in some countries, where the plant grows plentifully, for tanning leather. The pomegranate can scarcely be considered any thing more than a bush, and often bears abundantly when it is no higher than a man's head. Occa-

* See authorities and fuller notice in "Palestine Past and Present," page 194.

sionally, in very favorable situations, it grows to the height of twenty feet; but this is rare. The trunk is of unequal form, but has numerous branches. It sometimes bears thorns; and the fruit is always crowned with the calyx of the flower, presenting a peculiar appearance. When the fruit is cut through, it is found to contain numerous wine-colored or red globules, each enclosing a seed surrounded by a delicate and tender skin, which bursts on a slight pressure, liberating a cool and refreshing juice. Hence the simile of the ancients which likened the fruit to the drops of the blood of Bacchus, the god of wine. The Scriptural word *rimmon* is the name of the pomegranate; and it is therefore thought that the Syrian god Rimmon was the same as Bacchus. Both Plutarch and Tacitus imagined that the Jews worshipped Bacchus, because of the palm-tree branches carried in procession at the feast of the tabernacle, combined with the offering of the pomegranate, and also perhaps because the name Rimmon, that of one of the Syrian gods, signified the fruit dedicated to Bacchus. From the word *punica* (the Latin for Carthage, and the botanical name for pomegranate) we may infer that its native land was near Carthage; and this is generally supposed to be the fact, as, according to Pliny, three kinds existed there,—the white, the red, and a larger and more astringent kind, seldom used save in medicine. From this country the plant was introduced among the Romans and throughout Europe. The ancients called it the Carthaginian apple,—perhaps only in allusion to its abundant growth near Carthage. It grows wild upon the shores of the Mediterranean, in Arabia, Persia, Bengal, China,

and Japan, and has been introduced into the East and West Indies. No plant seems to thrive and reward so well a careful cultivation as the pomegranate, especially in moderately warm climates. Farther north it fails to bear fruit, but the flowers increase in the brilliancy of the scarlet, especially where the plant receives proper attention. Not many years after Pliny's time, the Moors introduced the manufacture of leather into Spain; and their finest moroccos were tanned with the rind of this fruit. The fine leather manufactured at Cordova at one time supplied all Europe; whence the term "cordwainer," or worker in Cordovan leather, which was formerly given to shoemakers. Even at present morocco maintains its superiority, though, after the expulsion of the Moors, it was supposed that Northern Africa was the source of a better manufacture than that of Spain. Royle, in his "Himalaya Mountains," speaks of a wild variety much sought after for its superior tanning qualities and the medicinal properties of its roots.

This shrub is most cheering and refreshing in the rich and shaded green of the leaves, the luscious and cooling juice of the fruit, and the intense brilliancy of the flowers. The "spiced wine" of Solomon's Song, (viii. 2,) said to have been made from the pomegranate, may be understood literally as the product of the juice; for wine is still made from it in Persia, as was the case formerly, when great quantities were produced both for exportation and for use at home.

Several places in Scripture seem to have been called Rimmon, or the "pomegranate;" and in one place En-Rimmon (Neh. xi. 29) is spoken of,—which means the "spring of the

pomegranates;" and in another Gath-Rimmon, (Josh. xix. 45,) or "pomegranate of Gath." The beautiful form of the fruit was early copied by architects in the execution of ornamental work, as we see in 1 Kings vii., where it appears that the decorations of the capitals of the temple-columns were of carved pomegranates.

The mention of the plant is most poetical and appropriate wherever it occurs in the Song of Solomon; and, from passages therein, it seems that the time of flowering was not distant from that of the blossoming of the grape-vines, so that the beauty of the pomegranate-flower, which has no special fragrance, was made more agreeable by the perfume of the vine-blossoms. The flowers and leaves are represented in Plate V.



THE word “kaneh,” translated “reed” in the original, seems to refer to that botanical variety the name of which we have placed at the head of this section. This reed is long and light, and was formerly used for arrows.

Perhaps for this reason it was of importance to the Jews, who practised archery after the terrible defeat of Saul on Mount Gilboa by the Philistines, whose archers are thought to have gained them the battle. After that event, David directed the use of the bow to be taught, (2 Sam. i. 18;) and then possibly the reed became of more importance than formerly. It furnished, however, an instrument for writing; and the stem of the reed is in use at present, some of the most beautiful specimens of manuscript being executed by means of this material. To prepare the reeds for this purpose, the perfect stems are soaked for some time, and then carefully dried, being turned during the drying, by which they acquire a fine brown color. The outer skin is hardened and the pith nearly absorbed. When thus prepared, they will remain sharpened during use for a considerable time.

If the reed plant should become mashed or bruised, yet retain its erect position, it may be strengthened by growth; but if the wind sweeps over it, or it should be broken down, it never recovers itself, and is worthless. Hence the fitness of the

reference to the Saviour, "A bruised reed shall he not break,"—intimating the tenderness of our Lord's care and affection to the weak and fainting.

The English word "cane" is probably derived, through several changes, from the Hebrew "kaneh," translated "reed." In English the word "cane" is applied to varieties of the reed, and even to objects resembling it only in shape. Thus, a walking-stick, though made of oak or rose-wood, is called a cane; and the bamboo and sugar-plant are canes. With the same variety of meaning the word "reed" is used in the Scriptures. In 3 John, 13th verse, it is a *pen*:—"I will not with ink and *pen* write unto thee." In Luke vii. 24, "a *reed* shaken by the wind," denoted any slender vegetation. In Matt. xxvii. 29, 30, where it is said the *reed* was put in our Saviour's hand and his head smitten with it, it probably signified a long stick. In Matt. xxvii. 48 and Mark xv. 36, it is said that the vinegar was presented to the Saviour on a *reed*; while in John xix. 29, it is said to be put upon *hyssop*. On account of this variation, it has been supposed that the stem of the hyssop was intended by "reed" in one passage, but that the whole plant was referred to in the other. This is improbable; for the hyssop was a small plant, and was with greater likelihood already fastened to a stick, for the reasons stated under "Hyssop." St. John, being near the cross, would more readily have noticed the hyssop; while the others, being at a distance, would have regarded only the stick. Either would have spoken correctly, as the vinegar was raised as truly on the hyssop as on the stick or reed.

ROSE.

ROSACEÆ.

Rosa Centifolia Rubra.

THE *rosa centifolia* has been already supposed to be the kind celebrated as the rose of ancient Palestine. No flower has more varieties than the rose; and it is yet capable of more extended forms. The modifications in color, shape, and fragrance are almost endless. From ancient times it has formed the symbol of beauty and of loveliness; and nowhere is it valued more than in the East. Some of the most pleasing and charming varieties grow on the borders of the Mediterranean and on the islands of that sea,—some slips of which I have succeeded in transporting to America, which immediately commenced to grow on being put in the soil. The method adopted was, to immerse the freshly-cut slips having buds into long tin tubes filled with honey and seal tightly. In this way were preserved cuttings from the finest roses of the Egyptian Pasha's garden.

The same species of flowers in the East have a more agreeable fragrance than in the West. Hasselquist saw the damask rose, the common red, the cinnamon, and several other varieties, in Syria,—which is said to have derived its name from the abundance of its native roses. This is, however, one of those flowers which, if it ever grew wild in Syria, has decreased in number and variety and deteriorated in beauty. The wild

rose, or sweet brier, seems to grow wild in some parts of the Holy Land, as we have noticed in our travels; but the double roses, or at least the varieties which we understand by that name, are seldom seen—indeed, we are inclined to think, never seen—wild. The cultivated rose of Syria exceeds in beauty and perfection that of any other country; and the gardens about Damascus are like beautiful fairy-grounds in fragrance and appearance. We have often been delighted beyond description by the peculiar delicacy and novelty of the perfume as it swept by us from some garden or grove, suggesting every scene of beauty described in the dreamy tales of the Arabian Nights. The commingling of perfumes and the soft shades of the flowers make the aspect and fragrance of the Eastern roses peculiar and scarcely capable of appreciation by owners of the most attractive gardens of our country. Many of the poets of the East draw their similes and figures from the rose; and in the writings of Sadi the following beautiful illustration of the influence of good company occurs. “One day, as I was going to the bath, my friend put into my hand a piece of scented clay. The fragrance was so delicious that I addressed it, saying, ‘What art thou, and whence is thy sweetness? Art thou of musk? or is thy substance ambergris?’ It answered, ‘Alas! of myself I am but a piece of worthless clay; but I was long the companion of the rose, who hath breathed her sweetness into me.’” Notwithstanding the extensive cultivation of roses at present, they are mentioned in but two verses of Scripture,—in the Song of Solomon ii. 1, and Isaiah xxxv. 1,—in both of which places it is evident that they were not common

flowers. In the Apocrypha, wisdom is compared to the “rose-plant in Jericho,”—an expression which shows that it was peculiar to that place or that it was not elsewhere so common. The richness of the soil about Jericho was proverbial in the time of Josephus; and, where the soil is fertile and well cared for, the luxuriance of the rose is exceeding. It would rapidly degenerate or entirely disappear after the cultivation of the soil ceased; and as the gardens were neglected soon after the commencement of the Christian era, we may reasonably suppose that the roses began to fail about the same time. The monks, however, during the times of the Crusades, discovered a singular umbelliferous plant which grows a few inches above the soil, bears a number of small flowers containing a seed, and when it dies folds up and is blown over the soil, opening when it comes in contact with moisture. They called it the “rose of Jericho.” But this is a modern invention and a usurpation of the name, which evidently belonged to a totally different plant, as may be seen from an examination of Scripture. There were places in Palestine, as in other countries, where the rose and other flowers grew either in greater profusion or in greater excellence than in other places. Hence the rose of Sharon and the rose of Jericho were probably only very agreeable developments of the rose, due either to the richer soil of Sharon and Jericho, or the greater skill of the florists of those places. Very beautiful double varieties have been obtained by simply cultivating carefully the almost scentless single wild rose.

RUTÆ.

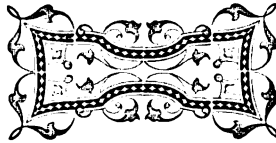
RUE.

Ruta Graveolens.

THIS little plant is mentioned but once,—in Luke xi. 42, to which passage we shall refer hereafter. It is a perennial plant, seldom growing more than three feet high,—usually not more than two. The leaves are divided or doubly pinnate, and rather thicker than is usual in plants of this size. The bark of the plant near the base is rough and woody; and the stem terminates in several branches ending in smooth, soft, green twigs. The flowers are small and yellow, and occur in such numbers at the top of the plant that they might almost be said to grow in clusters. The petals are four or five in number and concave, with usually ten stamens, sometimes only eight. Its flowering-time in European countries is from June to September. The plant is at present used as a stimulant; but it has a disagreeable odor and a hot, acrid, and bitter taste. The ancients used it as a condiment, and believed it to have the power of preventing poisons from affecting the human system. Even at present it is supposed to have the quality of warding off infection; and it is said that in some places in Britain it is strewed about the halls of justice, as a preventive of disease which criminals might convey from their cells to the court whither they are brought for trial. This little plant is supposed to be a native of Southern Europe.

Hasselquist says that he saw "rue" on Mount Tabor. He does not speak of it as cultivated; and we are left to suppose that it grew wild.

The plant was evidently of no importance; and hence its appropriateness in the catalogue to which we have already referred, as forming one of those plants the tithing of which indicated the minute regard of the Jews to the mere form of the law, while they neglected and passed over judgment and the love of God.



RUSH.

(*Common Rush.*)

JUNCÆÆ.

Juncus Effusus.

THIS plant is a native of cold climates; but travellers have spoken of the rush as growing on the borders of the Red Sea and in various parts of the Holy Land. Among the ancients the rush was esteemed for its excellency as a material for mat-making, as it is at present in Japan and other countries. By the Romans it was used for fishermen's floats, and it is still thus used on the Mediterranean, being attached to the nets. Anciently, the pith, carefully extracted, served as wicks for lighting the apartments of the dead; and even now among the poor in various European countries the rush candle sheds its dim light upon the cradle of the infant in many a lowly cabin room during the long and weary nights of sickness.

The only references in Scripture are in Job viii. 11 and in Isa. ix. 14, xix. 15, and xxxv. 7,—from which we can obtain but little knowledge of its character; but in one passage the remark, "Neither shall there be any work for Egypt, which the branch or rush may do," leads us to think that the rush was used for some insignificant purpose in that day, which, small as it was, should cease in the utter overthrow of the prosperity of the country.

The softer texture of the rush makes it preferable to wheat-straw used in many places for mattresses; and about two hundred years ago even the palace-floors of wealthy sovereigns, both kings and queens, were covered with rushes, carpets not being then known. Several farms or manors in Great Britain are still held upon the condition that the tenant shall furnish rushes for the floor of the sovereign's bed-chamber when he shall visit the neighboring hunting-places and castles.



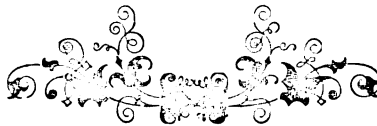
RYE.

GRAMINACEÆ.

Secale Cereale, or
Triticum Spelta.

THERE is some disagreement as to which of the varieties given above is the “rye” of Scripture. It is supposed that the “rye” of Isaiah xxviii. 25 is that known by us as rye, because the same kind is found both at the foot of Mount Caucasus and in Syria,—especially as most of the plants and trees mentioned by this prophet are found in the North of Palestine. Herodotus speaks of a kind of bread, called *cyllestis*, made from spelt,—a kind of bearded wheat much cultivated in Egypt in ancient times. This was probably the “rye” of Exodus ix. 32, which ripened about the time of the wheat,—as we find in that passage that the wheat and rye were not injured in the hailstorm, for they were grown up.

The two places above referred to are the only ones in which the word occurs in the Scriptures.



SAFFRON.

IRIDACEÆ.

Crocus Sativus.

THIS little plant is perennial, having a rounded and somewhat flattened bulb root, from which the flower rises a little above the ground upon a long, slender, and tender tube. The flower is of several colors, in some places orange-yellow, bluish, and purple. Those that we saw growing wild in the Holy Land were of the former kind and were found upon Mount Tabor. A beautiful specimen in our possession still retains the yellow color it had when first gathered. The saffron of commerce is obtained from the stigmas or summits of the pistils, which, with a part of the stem or style, are gathered together, sometimes in masses, and dried in the sun or by artificial heat. The finest is dried loosely; and five pounds of the freshly-gathered stigmas are reduced to only one pound when dried. As the stigmas are always of the same rich orange tint, the color of the saffron will be the same whatever may be that of the flower from which it is gathered. It is a native of Greece and Asia Minor, and has been cultivated in those countries from the earliest ages. The plants now found in Palestine are not very odorous; but plants of the same inodorous variety become delicately fragrant after cultivation; and those which possess fragrance owe that property to an exhalation from the stigmas. These are threefold

and attached to the termination of the style, which hangs out on one side of the corolla from between two of its segments or petals. These stigmas form the medicinal part of the plant. By the ancients it was employed, under the name of *crocus*, both as a medicine and with their food: it was also highly esteemed by the Arabians. Hasselquist found great quantities near Smyrna, and between that place and Magnesia, blooming in early spring. They were of a deep-yellow and lighter shade. Russell speaks of a variety near Aleppo, and also of a scented kind which he says was common in Syria; and it is supposed that a mixture of this fragrant plant with the ordinary drug formed the saffron which Pliny says was scattered over the seats of the public theatres to form an agreeable perfume for the spectators.

The Scripture allusion to this plant, occurring only in Song of Solomon iv. 14, must have had regard to this fragrant kind, judging from the fact that all the associations in that poetical passage are those of fragrance:—"Spikenard and saffron, calamus and cinnamon, with all trees of frankincense, myrrh and aloes, with all the chief spices. . . . Awake, O north wind; and come, thou south: blow upon my garden, that the spices thereof may flow out."



SPIKENARD.

(*Valerian Jatamansi.*)

VALERIANACEÆ.

Nardostachys Jatamansi.

THE ancients were acquainted with several aromatic roots bearing the name *nardus*, and distinguished, according to the country whence the root was obtained, by the name *Indica*, *Celtica*, or *Montana*. The general name “valerian” was given to the family or order under which this plant was classed. The *Indica* was the variety brought from Bengal in India, the *Celtica* from the Alps, and the *montana* from other mountain regions of Europe. The Indian specimen is the kind called *jatamansi*. It rises from the ground like a hairy spike of bearded wheat,—hence called *spikenard*. The drug is a small root, two or three inches in length, attached to a tuft of light-brown, slender fibres, having a bitter and aromatic taste but an agreeable odor. We are indebted to Sir William Jones for the identification of the names “*spikenard*” and “*jatamansi*,” (which means a lock of hair,)—the name given to the plant by the Hindoo and Mussulman physicians, and that by which it is sold in the shops. His opinion appeared in the “*Asiatic Researches*,” vol. iv. p. 117, as follows:—

“I am persuaded that the true nard is a species of valerian produced in the most remote and hilly parts of India, such as

Nepal, Morang, and Butan,* near which Ptolemy fixes its native soil. The commercial agents of the Deva Rajah call it also pampi; and, by their account, the dried specimens, which look like the tails of ermines, rise from the ground, resembling ears of green wheat both in form and color,—a fact which perfectly accounts for the names *stachys*, *spica*, *sumbul*, and *khushah*, which the Greeks, Romans, Arabs, and Persians have given to the drug, though it is not properly a *spike*, and not merely a *root*, but the *whole plant*, which the natives gather for the sale before the radical leaves, of which the fibres only remain after a few months, have unfolded themselves from the base of the stem.”

Great quantities were, in Sir William's time, exported from Butan, (or Bhotan,) where the mode of cultivation was a secret kept with scrupulous care. The Indian spikenard was so scarce that in the time of Hasselquist the Venetian merchants brought sixty tons of Celtic spikenard to Cairo and sold it to the Abyssinians and Nubians at the high price of one hundred rix-dollars per ton;† and even at this price it was much cheaper than the Indian, which was superior in quality.

After considerable research and criticism, and although the assertion has been lately made that Sir William did not receive the proper root, scholars are generally agreed that this *jatamansi* is the spikenard of the ancients. The root is rare, and probably was always difficult to procure; and, while at present some varieties are not very likely to convey the idea of per-

* These provinces are on the northeast borders of Hindostan.

† About \$100 American money.

fume, it should be remembered that it is probable that the ointment spoken of by the Evangelists Mark (xiv. 3) and John (xii. 3) was not simply spikenard, but that substance mingled with others, and that this art of compounding was more successfully practised in some places than at others. Thus, Laodicea and Tarsus had the reputation of forming the best, which was preserved in alabaster boxes, as most retentive of the fragrance; and the perfume of those places is frequently referred to by Herodotus, Cicero, and Pliny. The vessel was sealed at the top, and gave forth the scent sparingly until the sealed cover was broken and the ointment poured out,—which was seldom done except on festal or remarkable occasions. To this custom of using the spikenard Horace alludes when he invites Virgil to the feast where he promises to produce the little alabaster box of spikenard (“*nardi parvus onyx*”) on condition that Horace shall furnish the wine. The alabaster was also called *onyx*,—as we see from Dioscorides, (v. 153.) The lavish use of the ointment upon the feet of Jesus by Mary at the supper (John xii.) was in keeping with the highest style of affectionate compliment at royal feasts. Mary was able to purchase the ointment, which, as the penny was worth sixteen cents,—according to the value of that coin as determined from recent investigations,—would cost nearly fifty dollars. The breaking of the box was simply unsealing the top. This, therefore, was an appropriate gift from a woman of property,—such as Mary evidently was,—and one manifesting her gratitude to Jesus, who had restored to life that brother whom she loved with such tenderness.

TARE.

(*Smooth Tare and Rough Tare.*)

LEGUMINOSÆ

and

GRAMINACEÆ.

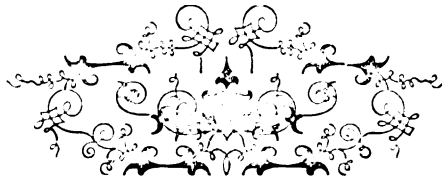
Errum tetrospermum.

Errum hirsutum.

Lolium temulentum. (Darnel.)

THESE are the varieties of the “tare” supposed to be spoken of in the parable of the sower, in St. Matthew xiii. 25, 27, 29, 30. The hairy tare, or *hirsutum*, has been known to overgrow the wheat-crop and entirely destroy it. The other variety of the *errum* is not quite so mischievous. Different kinds of weeds are found among the wheat-crops of Syria; and Russell speaks of the various-colored flowers growing up in the wheat-fields near Aleppo. The wheat is often gathered with the tares and separated afterwards; and even among the cultivated green crops the tares are sought out as pleasant food for cattle. The stem, branches, and leaves are soft, and the plant bears a little pod. The darnel, the third variety mentioned above, is poisonous, and more like a grass; but respectable authorities have supposed that this poisonous kind was intended in the parable. The seeds of a darnel, not poisonous, have been found mixed with the bread taken from sepulchral chambers of Egypt, by Dr. Brown; and it is supposed that wherever this poisonous kind

existed its deleterious quality was due to the ergot, which is an excrescence on the plant supposed to be the result of disease. The effect of the ergot of maize or Indian corn is to deprive of hair the animal eating much of it. Even the teeth and hoofs of mules have been known to fall off in consequence of the animals feeding freely upon such diseased corn. Perhaps the scriptural allusion includes the several kinds, each injurious to the crops, very tenacious of growth, and requiring great energy on the part of the husbandman to prevent its presence in the field.



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THISTLE.

[*Cirsium Arabicus*]

DOVE'S DUNG & ROOT.

[*Ornithogalum Umbellatum*]

HYSSOP.

[*Hyssopus Officinalis*]

Region around Bethshem.

Designed by the artist.

Printed colors by T. Sinclair Phaid

THISTLE.

CYNAROCEPHALÆ.

Carlina lanata. (Linn.)

Carduus Arabicus.

THE kind first mentioned is probably the thistle of Gen. iii. 18 and of Job xxxi. 40. The latter, and a lofty species with double leaves and large globe flowers, called by Dr. Clarke *Echinops grandiflora*, are more extensively found than any others of the almost numberless varieties of the Palestine thistle. In no other country do thorns and thistles grow in greater abundance and diversity than in the "land of promise." The varieties of this plant seem to be running riot over the face of the whole country, as though in triumphant contrast with the state of affairs in the prosperous days of Israel. Among the thistles of Palestine is the artichoke, called also the *cynara*, found wild upon Mount Tabor. It was introduced into England during the time of Henry VIII., by a French priest, Wolf, the gardener of that monarch. He also introduced some delicate plums and the apricot from Syria and Palestine. Hasselquist noticed eight or ten varieties of thistles on his way from Jerusalem to Ramah,—a distance of only five miles. The *Carduus Arabicus* is a small thistle, very correctly represented in Plate IV. from a specimen in my possession which was plucked in the northern part of Palestine. It bears a flower of a bright pink color, almost

crimson, the petals of which partake of that peculiarity of the order of the *gnaphalium* or "everlasting flowers" which causes them to retain their color for so long a time. It is found throughout the land, among the rocks and fallen walls. In the beautiful parable which Jehoash, king of Israel, uttered when Amaziah challenged him to battle, the allusion is probably to this thistle. The words are the same in 2 Kings xiv. 9 and 2 Chron. xxv. 18. "The thistle that was in Lebanon sent to the cedar that was in Lebanon, saying, Give thy daughter to my son to wife: and there passed by a wild beast that was in Lebanon, and trod down the thistle." The *carduus* is the thistle of Lebanon, a showy plant, with numerous short, thorn-edged leaves. Jehoash's parable was a prophetic illustration; for the wild beast did tread down the thistle, since Jehoash, though he declined the challenge, finally met the challenger and conquered him, and tore down a part of Jerusalem, where he made his residence. Even in the thistle there is sustenance for cattle and many birds; and the goldfinch of Lebanon (beautifully figured and colored in "Palestine Past and Present") feeds upon the seeds of this plant,—whence it receives its Latin name *carduus*, as well as its French *chardonneret*, from *chardon*, a thistle.



THORN.

RHAMNÆÆ.

Paliurus Napeca, (Christ's thorn.)

SOLANACEÆÆ.

Rhamnus Spina Christi, (Buckthorn.)

Lycium horridum.

THE species of thorn-plants in Palestine are numerous; and the various words in the Hebrew signifying thorns must indicate particular varieties. The *paliurus*, which is found growing around the Lake of Tiberias, is a beautiful plant, despite the thorn. The seed-vessel is peculiar, being round, flat, and like cork in substance, with the hard seed imbedded in the centre of the encircling rim. The Ziziphus or jujube-bush is found in the same places, and with the *paliurus* among the Lebanon shrubs. Its branches are armed with unequal thorns opposite each other,—one short and hooked, the other nearly straight and long. According to the Rabbins, there are twenty-two words in the Hebrew Scriptures signifying thorns or prickles. Hence the difficulty of identifying all. The *kotz* of the Hebrews, according to Celsius, who has described sixteen varieties, means “thorn” in general. The first named, or the *paliurus*, is called by the Arabs “*nabea*,” according to Hasselquist, who thinks that, as it bore a leaf somewhat similar to that of the ivy, with which conquerors were crowned, it would have been chosen at the trial of our

Saviour, in order that to the mockery of such a crown might be added the pain of its double thorn. The *rhamnus* also grows freely in the country; and this has by some been supposed to be the bush furnishing the thorn: whence its name, *Spina Christi*.

The *lycium* has piercing, stinging thorns, though the appearance of the plant is pleasant. This also is a native of Palestine.

The *solanum spinosum*, or mad apple, is supposed to be the thorn of Prov. xv. 19 :—"The way of the slothful man is as a hedge of thorns." The cactus ficus Indica, or enormous prickly pear of Syria, which at present forms the hedges of the country, has been supposed by some to have formed the "hedge of thorns." But the chief argument against this supposition is that after the discovery of America, the Spanish, Portuguese, and Dutch traders introduced this cactus into the East, for the purpose of raising the cochineal-insect. The plant, finding a suitable soil and climate, has become so general that it has been by some supposed to be indigenous. Ursini, in his *Arboretum Biblicum*, so far back as 1699, gives a tolerably correct picture of this cactus and supposes it was a thorn of Scripture. From this source, and from the present luxuriant growth of this thorn, have arisen some mistakes of travellers and even of commentators. The *solanum spinosum* (in the Hebrew *chedek*) is supposed to be the thorn of Micah vii. 4.

Hasselquist found encumbering the ground everywhere the beautiful thorn called the *ononis spinosa*, or rest-harrow, the latter name given it from the matted state in which its roots

are found, preventing cultivation except by great toil. The Swedish botanists supposed, from the frequency and character of the ononis, that this might be the original or principal thorn of the curse, "Thorns also, and thistles, shall it bring forth unto thee."

The Rabbins say that the butcher's broom, or the *ruscus aculeatus*, called also the knee-holly or skewer-wood, is the thorn intended by the Hebrew *atad*, used as a proper name in Gen. i. 10 :—"They came to the threshing-floor of Atad, which is beyond Jordan; and there they mourned with a great and very sore lamentation." In Judges ix. 14, 15, *atad* is translated "bramble;" and in Ps. lviii. 9, "thorns." The Arab tradition is that the sons of Ishmael mourned with the sons of Jacob, and planted thorns around the grave and crowned them with flowers and leaves. The *ruscus* grows in Great Britain in particular districts, where, owing to the character of the woody fibre, which never splinters or gets rough, it is used for skewers: hence the name skewer-wood.

One of the commonest wild shrubs of Palestine is the sloe, or black-thorn,—the *prunus sylvestris*; its name, *choach*, in Hebrew, is translated "thickets" in 1 Sam. xiii. 6, and "thistles" in Job xxxi. 60 also, but generally, and in many cases, "thorn,"—signifying probably the black thorn or sloe, according to Rabbinical ideas. It is well to remember the thorns as well as the flowers; but it would require more knowledge than is at present possessed, to classify and identify all the thorns even of Scripture, much more the thorns and thorny shrubs of the country.

VINE.

VITACEÆ.

Vinis Vinifera.

NOTWITHSTANDING the fact that vineyards exist and wine is made at present in Palestine, it is beyond doubt that the days have long since passed away when the vine flourished throughout the Holy Land. Probably those days ended in the reign of Elizabeth, when the songs of the vineyard in the land were somewhat like the "vintage shouting" of ancient times; for, according to Hakluyt, (see *Voyages*,) great quantities of Muscadel wine, made in Judea, and especially the fine wines of Askalon, were shipped from the ports of Palestine in that reign. Since then the prohibitions of the Mohammedan law have caused a decrease in the amount annually made. The vine is found wild at the foot of Mount Ararat, in the neighborhood of Noah's first vineyard; but it has spread east and west, into Georgia and Armenia and the northern parts of Persia, where it is also native: it does not, however, seem to flourish in India. Some have supposed that Noah cultivated the vine before the flood and at that early period drank of the wine made from his own vineyard. At present the soil of Egypt is doubtless unfriendly to the vine; but there appears to have been a gradual cessation of the cultivation of the grape, which would give ground for the supposition that before the time of the Exodus the grape was in

a higher state of culture than at any subsequent period. The vineyards at one time in Egypt must have been extensive, judging from the representations on the monuments and sculptures, where great numbers are represented gathering and preparing the grapes for wine, and stowing away the jars and the fruit itself. Allusions in Isaiah xvi. prove that vineyards and wine-presses existed east of the Jordan, at Heshbon and Jazer; and the scriptural accounts go to show that the cultivation must have been extensive. But now the vineyards planted and wines made there are scarcely worth mention; and the prophecy of Jeremiah is most mournfully and literally fulfilled: —“O vine of Sibmah, I will weep for thee with the weeping of Jazer: thy plants are gone over the sea, they reach even to the sea of Jazer (Dead Sea): the spoiler is fallen upon thy summer fruits and upon thy vintage. And joy and gladness is taken from the plentiful field, and from the land of Moab; and I have caused wine to fail from the wine-presses: none shall tread with shouting.” (Jer. xlviii. 32, 33.) Palestine presented a great contrast to Egypt in the extent and excellence of its vineyards, and its wines in the times of the Ptolemies were imported into Egypt, as the vineyards had long before that date disappeared from the land of Pharaoh. Even at present the grapes of Judea in places are extremely large and delicious, and forcibly suggest the fertility of the vineyards in the joyous times of the Jewish prosperity.

WHEAT.

GRAMINEÆ.

Triticum Æstivum.

Triticum Hybernum.

(Summer and Winter Wheat.)

THIS grain and the vine are referred to in Scripture more frequently than any other plants. The word “wheat” in several places in our version refers to grain in general, or to “corn.” But, though this may be true in reference to some passages, it cannot be equally true of all, for in many the signification is definitely wheat. Corn was the most general term, including barley and the rye, or spelt, of the Egyptians as well as wheat. The wheat of Egypt was mostly of the large ear, containing more grains than any variety cultivated in this country, and is called *triticum compositum*. The earliest method of preparing the wheat for eating was by simply parching the grains,—which is still the practice in many countries. Afterward, the method was adopted of simply breaking up the grains in a mortar, and then mixing this coarse flour with water and baking without yeast. Similar corn bread, with some yeast, has been found in Egyptian tombs and in Herculaneum.

Wheat changes its character somewhat by varied cultivation, and receives a name in accordance with its color, shape, weight, bearded or bald ear. In some countries varieties grow so tall that—as in Guzerat—a horseman may pass along unseen in

the furrows amid the wheat. Other varieties scarcely grow four feet in height. The wheat of Palestine is of the general character used by our farmers, and seldom, except in very favorable spots, bears more than eighteen to twenty bushels per acre. In favorable positions, and when properly treated, the crop sometimes exceeds twenty-eight, or even thirty, bushels. The soil in its virgin state, according to a late analysis, ("Palestine Past and Present,") is supposed to be capable of the richest culture and the finest production of this grain. When Sir Gardner Wilkinson opened a tomb in Thebes, he took from a vase some grains of wheat. In 1840, a few grains were planted in an open garden in Albury, near Guilford, and there flourished, after having been buried near three thousand years. The ears averaged seven inches in length, and from fifteen to twenty ears on each root or from one grain. It was bearded, and resembled what farmers call "Egyptian wheat." Other instances of the growth of wheat taken from mummies have been recorded, showing how long the life remains in the seed.



WORMWOOD.

(*Wormwood of Judea.*)

COMPOSITÆ,
and
ASTERACEÆ.

Artemisia Judaica,
or

Absinthium Santonicum Judaicum.

THE variety of “wormwood” above named is that which Hasselquist discovered on Mount Tabor. It is peculiar to Palestine, and hence derives the name “Judaicum.” It is a bitterer wormwood than any found in Europe or America. Besides the above variety, there are three others,—the *Nilotica*, *fruticosa*, and *cinerea*. The *Judaicum* flowers in January, and is a plant of small ash-colored leaves, with many stalks full of little yellow seeds,—the leaves and seeds being used for medicine. It has a bitter and salt-like sharpness of taste, and an unpleasant smell.

The references in Scripture seem to intimate that the bitterness of this plant was well known; and perhaps it grew in many places, as it is said at the present day to be found throughout the land, though at first noticed only on Mount Tabor.





CLOVER of JUDEA.

ADONIS.

APPLE of SODOM.

[*Adonis Autumnalis*]

Western Shore of Dead Sea near Masada.

Designs by the Author.

Pr in Colors by T Sinclair, Philad^a

MODERN FLOWERS.



WE have included in the previous pages all the flowers and fruits mentioned in Scripture. We have presented some which are doubtless uncertain; but about twenty-two or twenty-three have so much to distinguish them from the rest and to identify them with ancient varieties that considerable confidence may be placed in the opinions expressed that they are the same with those of Scripture times and reference.

But numbers of flowers, and some fruits not belonging to trees, have been found on the hills and in the valleys, which have never yet been mentioned, either in the Scriptures or in botanical works. Many, however, have been introduced into the country and spread over it from various causes,—some of which have been already noticed in our introductory chapters. Some have been transplanted from Europe by visitors.

In the final plate (VI.) we have three which might be considered representatives of three great classes of interest, the classic, the scriptural, and simply the botanical, and of three

geographical divisions. First, the Adonis. This little, bright-eyed plant flourishes principally north of Palestine and amid the Lebanon Mountains. The history of its origin is fabulous; but it bears the name of the son of a Tyrian queen. He was fond of the hunt, was wounded, and died, but was restored to life by the physician Cocytus. The fable says that the plant ever after bore the blood-stained flowers, each representing but one drop of Adonis's blood. These flowers sometimes bloom by millions, and are characteristic of that region of Lebanon where Adonis died.

On the right is a representation of the "apple of Sodom," with the blossoms and fruit. This is from a specimen still in this country, and in the most perfect state of preservation in both fruit and flowers. This plant grows near the Dead Sea, is about eight to ten feet high,—varying considerably in this respect,—and bears fruit which itself varies from one to two and a half inches in diameter. The plant from which we have a drawing bore fruit two and a half inches in diameter,—the largest we have seen. After the puncture made by a little insect the fruit invariably becomes decayed internally, and when ripe and pressed it breaks as would a mere shell. Hence the ancient notion that when ripe it contained ashes and bitterness, though not literally true, is based upon some semblance of fact. The fruit is not fit for food, and, when dried, the seeds roll about and rattle in the interior of the fibrous husk, which is somewhat similar to that of a ball-like gourd.

The clover represented in the same plate is a Judæan clover, resembling the honeysuckle in the form of the flower, and

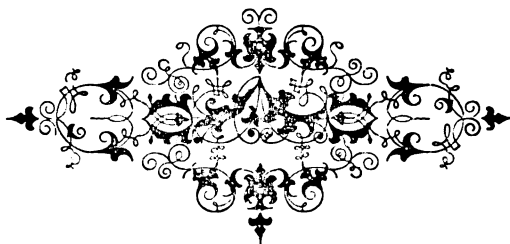
hence is peculiar. The representation is of a plant plucked in the Garden of Gethsemane, just under the cliffs of the Mount of Olives. But it is plentifully scattered through the plains of Central Palestine.

The Anemone common in Palestine is a beautiful little plant, with red-petaled flowers and dark stamens, short and closely set together. No flower varies more than this in size according to the cultivation: some flowers are in diameter only half an inch, though others, if cultivated in rich soil, with care, will attain to the diameter of a large hundred-leaved rose; but they are never double like the rose, and the color is a darker and duller red than that of the Adonis.

The poppies are beautiful,—particularly a yellow poppy, which is seldom found; but one specimen in my possession has retained its color unchanged. A method of preserving the color of such flowers, adopted with wonderful success, consists in laying the leaves several hours between slips of bibulous paper, to extract all the dew or rain, and then carefully pressing the flower with a very warm flat-iron till the leaf is *perfectly dry*. The more thoroughly the moisture has been extracted, the longer will the color remain.

We have now completed our list. Many modern flowers, and many ancient ones not named in Scripture, might be added. Some belong to trees, however,—which would require another work, the present having reference only to plants. The time may arrive when some one will be found competent and at leisure to visit the land and write a volume—which would be a large one—upon the hitherto unmentioned

flowers and plants which clothe the fields and plains, the valleys and hills, of the Holy Land, and which still linger around its fallen walls and monuments, decorating even its ruins with colors, the offerings of nature upon the grave of its ancient splendor.



BOTANICAL LIST.

THE following list will convey a good impression of the variety of plants found throughout Syria at present. I have to thank E. DURAND, ESQ., the skilful and learned botanist of the Academy of Natural Sciences at Philadelphia, for many identifications and corrections. The list is, without exception, that of natural specimens in my possession.

Adiantum (Jerusalem): delicate stem and serrated leaf.

Adonis autumnalis: scarlet flower, and a yellow and red variety.

Anemone (described in text).

Amaryllidaceæ, (Mt. Lebanon,) *Ixiolirion montanum*: long, violet flowers.

Amaryllidaceæ, *Oporanthus luteus* (Jerusalem): yellow, long flowers.

Amaryllidaceæ, *Narcissus tezetta*: Jordan, near Jericho.

Anne Erica (Lebanon): small pink clusters of blossoms.

Artemisia ponteca (various places).

Astragalus demifolius (Tourn.): small leaves, yellow flowers.

Avena: wild oat, (various places.)

Berberis vulgaris (Linn.) (Lebanon): "barberry."

Briza media (Linn.): 7 to 8 inches high, blossoms like hops.

Bryum: thick rock moss, on rocks of Lebanon.

Capparis spinosa: "the caper."

Carlina lanata (Linn.): thistle with crimson-edged flowers.

Cardylocarpus muricatus: panicked, lanceolate leaves and white blossoms.

Carob (or *Caruba*): similar to the false locust, bearing what are commonly called "honey-shucks."

Ceratocephalus falcatus (Pers.): shrub, 4 to 5 inches high, with delicate white blossoms.

Coniferæ—*Abies*? : bushy-headed plants, 5 to 6 inches high.

Cordia myxa: meis-tree, from which a birdlime is made.

Cotula pubescens (Desf.): leaves pinnate, like *Adonis*, but more minute; yellow flowers.

Cyclamen Europ. (Linn.): some very large and violet, drooping flower.

Druba affinis Alpina (Linn.) (Lebanon): 2 inches high.

Elæagnus angustifolia (Linn.): 5 or 6 feet high, willow-like, and grows near Lake of Tiberias and the Jordan.

Epilobium molle? (Linn.): soft, velvet-like leaves, small pink flowers.

Fern: variety small leaves, and usually found about rocks,—becomes reddish brown,—specimen from Aceldama, near Jerusalem: it is worked into wreaths and fastened to paper and cards.

Fumaria officinalis: var. *parva flora*, minute leaves: it is a febrifuge, and found very frequently in the mountains of Lebanon.

Galium Græcum or *affinis* (Linn.): flowers scarcely perceptible.

Grass: thick heads, vari-parted.

“ like very small oats.

“ bushy; short, hairy, and down-like heads.

Hordeum murinum (Linn.).

Hyacinthus botryoides? (Linn.): little blue-bell flowers.

Hypericum: leaves generally from one to two inches long; small flowers.

Hypocoum erectum (Linn.): Mosque of Omar.

Hypocrepis multisilignosa (Linn.).

Iris: flowers very blue at end of each petal.

Junipercus excelsa: tall tree,—specimen from Beirût.

Linaria chalepensis (Mill.): white flower; 5 to 8 inches high,—specimen from Lebanon.

Lobelia: small blue flower.

Lychnis Orientalis: very much resembles the small monopetalous clustering pink flowers called "mountain pinks."

Lotus: a little yellow blossom, and is a leguminous plant.

Mimosa Farnesiana: tree, grows from 10 to 15 feet high, bears a downy, yellow, bell-like, fragrant blossom, and the usual form of the minosa leaf.

Morus alba (Linn.): white mulberry; very common in Lebanon; cultivated largely for silkworms.

Moss: long and delicate kind, correctly figured in "Palestine, Past and Present," in the plate of birds.

Myrtis communis: white blossoms, very slightly yellow, appear first, and afterward the leaves.

Olæa Europæa (Linn.).

Ornithogalum umbellatum: "star of Bethlehem."

Ornithopus compressus, or *purpurillus*.

Papaver glaucum flavum: bright orange poppy, rather rare,—specimen found north of Lake of Tiberias.

Papaver Orientale (Linn.): with purple-and-brown flowers.

Papaver Rhœus (Linn.).

Paronychia Hispanica (var. B. Poic.): "everlasting" flowers, very thin petals, and white,—described in "Palestine, Past and Present," p. 350.

Pinus Cedrus, or *Cedrus Lebani*: Arabic *arz*, Hebrew *eres*. Cedar of Lebanon,—two little plants, each 6 to 7 inches high.

Punica granatum (Linn.): double-flowering and fruit-bearing pomegranate.

Polygonum aviculum (Linn.): small pink blossoms alternate on the branch.

Quercus coccifera (Linn.): bears prickly leaf; tree grows 12 to 15 feet high

Reseda alba : mignonnette, wild, around Jerusalem and in the Lebanon Mountains.

Rhamnez, *Paliurus aubletia*, (of Shultz,) is a native of China,—probably introduced.

Rhus coriaria (Linn.) : minute flowers on the end of the stem; leaves small.

Saccharum : a species of; not indigenous,—specimen from Beirût.

Salvia affinis, *horminum* (Linn.) : small, sage-like leaves.

Schinus molle (Linn.) : “pepper-tree” of South America.

Serapias lingua (Linn.).

Tamarix Africana? (Poic.)

Trifolium procumbens, var. *filiformes*, (Linn.,) has minute flowers.

Trifolium tomentosum (Linn.) : small, round, gray, downy flowers.

Trifolium arvense : grass-like, fine, hairy blossoms.

Vicia : several inches high, and bears an oval pod.

Vicia longifolia (Poic.).

Xeranthemum annuum (Linn.) : red, narrow petals, “everlasting.”

Ziziphus vulgaris (Tourn.) : jujube-tree, found in Lebanon Mountains and around Lake of Tiberias.



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OF FRUITS AND FLOWERS
OF THE HOLY LAND

